Fostering Innovation with 4IND

AI Video Analysis Solution Provider

COMPANY BROCHURE | 4IND Co., Ltd

http://4ind.co.kr

SMART FACTORY

SMART CITY

5G

4IND 포인드㈜

BOM PLATFORM

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.

CONTENTS

COMPANY INFORMATION

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

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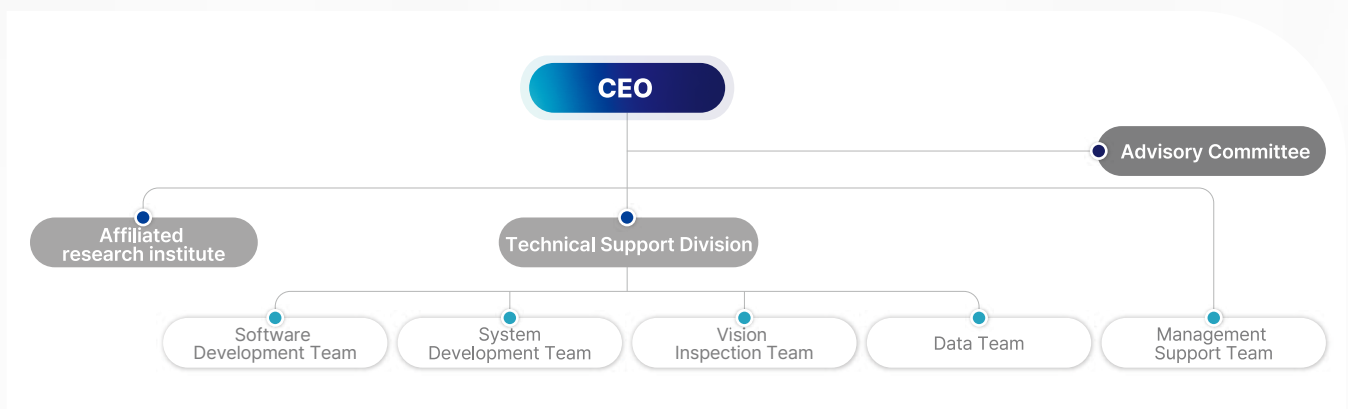
2019

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
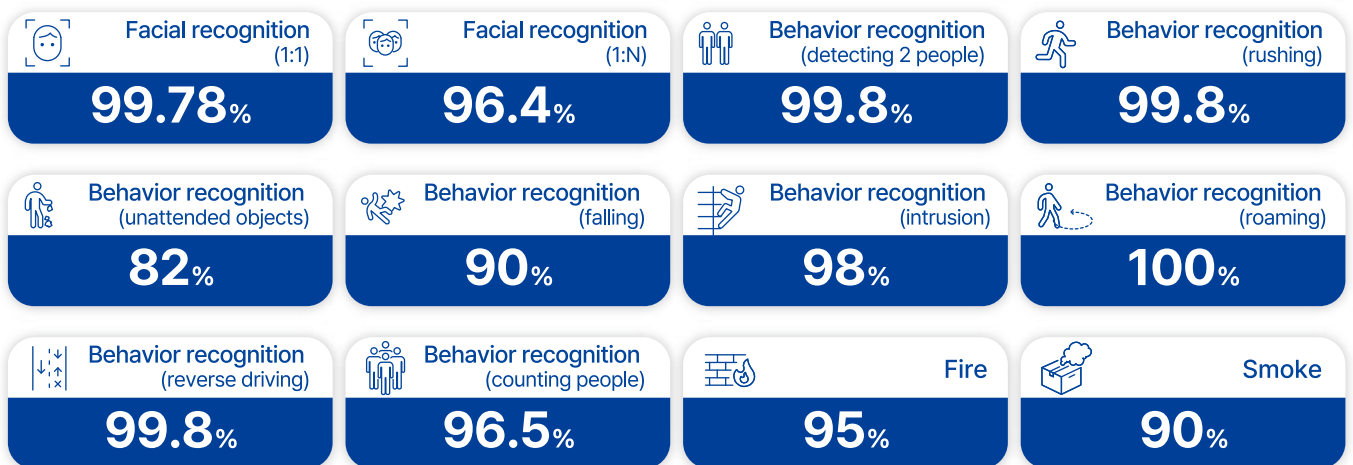03 · Selected for Korea Railroad Corporation's CCTV-based intelligent train surveillance system development project

**Implement customized services suitable
for customers' business environments**

We provide the best solutions with
customized systems for diverse needs.
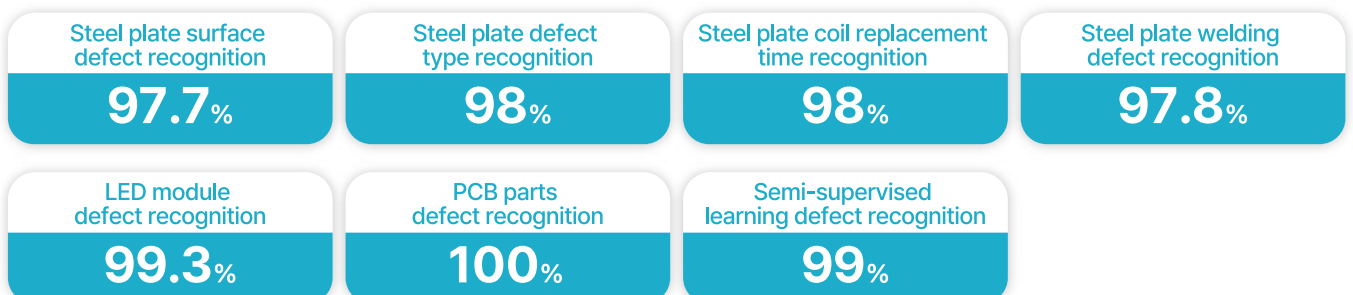
✓ **Superior recognition rate**

BOM PLATFORM

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

Facial recognition (1:1)	Facial recognition (1:N)	Behavior recognition (detecting 2 people)	Behavior recognition (rushing)
99.78%	**96.4**%	**99.8**%	**99.8**%

Behavior recognition (unattended objects)	Behavior recognition (falling)	Behavior recognition (intrusion)	Behavior recognition (roaming)
82%	**90**%	**98**%	**100**%

Behavior recognition (reverse driving)	Behavior recognition (counting people)	Fire	Smoke
99.8%	**96.5**%	**95**%	**90**%

BOM INSPECTION

*International KOLAS test report-based

Steel plate surface defect recognition	Steel plate defect type recognition	Steel plate coil replacement time recognition	Steel plate welding defect recognition
97.7%	**98**%	**98**%	**97.8**%

LED module defect recognition	PCB parts defect recognition	Semi-supervised learning defect recognition
99.3%	**100**%	**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

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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

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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

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.

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
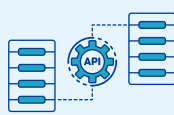- ✓ Setting detection events for per CCTV

PRODUCT DIFFERENTIATION

Based on 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**

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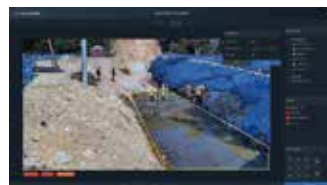
REFERENCE

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

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Hardware

| GPU Rack Server | GPU Edge Device | NPU Edge Devive | Cloud |

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Video Data

| NVR | CCTV | Web Cam | Drone |

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▼

Select Detection Events

Safety area	Security area	Transportation & automotive areas	Customized for clients
Fire/smoke detection	Facial recognition (1:N)	Traffic analysis	Counting pedestrians
Detecting illegal garbage disposal	ID validation	License plate recognition	In-store behavior analysis
Fall detection	Access control	Speed violation detection	Turning on warning lights in
Violence/fight detection	Restricted area intrusion detection	Parking violation detection	Detecting people near heavy equipment
Detecting people who don't wear safety helmets	Identification and movement tracking	Detecting people who don't wear safety helmets	Parking space control
. . .	. . .	. . .	. . .

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

Integrated manufacturing process and
QUALITY MANAGEMENT PLATFORM

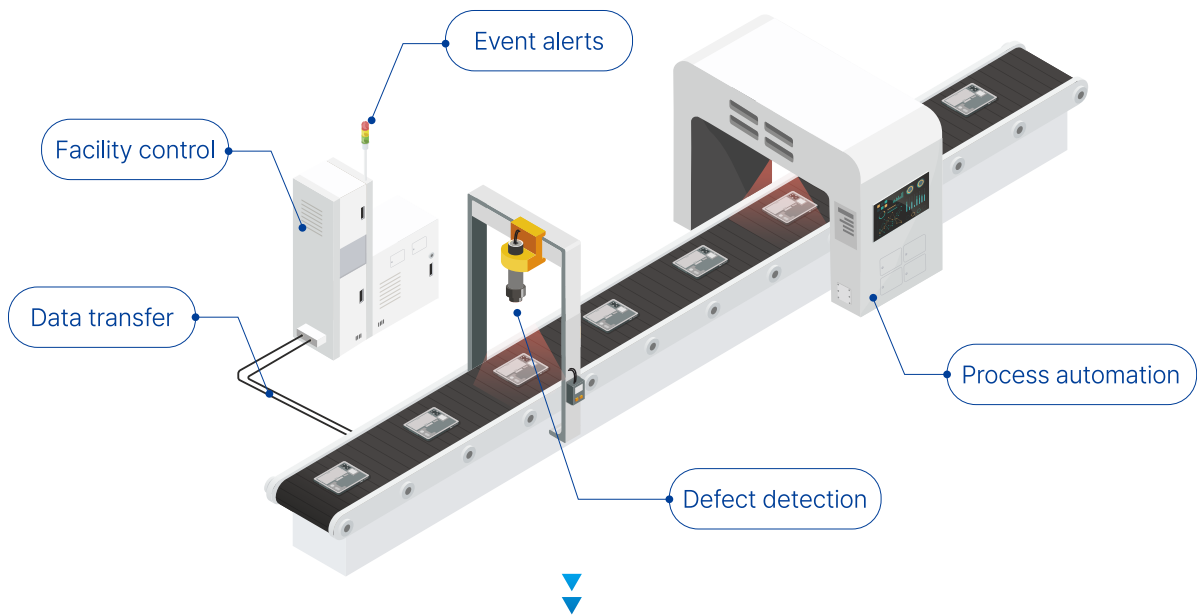## APPLICABLE INDUSTRIES

| Electronic products | Steel | Semiconductor | Secondary battery | Automotive parts |

Build a Manufacturing process measurement analysis system

- Event alerts
- Facility control
- Data transfer
- Process automation
- Defect detection

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

- Full site control
- Status analysis
- Quality control by site
- Abnormal data collection
- New product registration
- Quality control by site

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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

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	NPU computation	Touch display
1ch	**6**Tops	**10.1** Inch

▲ BOM KIOSK FD

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	NPU computation	Touch display
4ch	**6**Tops or higher	**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	RAM	eMMC
1ch	**8**GB	**32**GB

BOM EDGE BASIC

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

Number of supported channels	RAM	eMMC
2ch	**16**GB	**256**GB

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

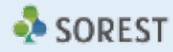| BOM Edge Mini	BOM Edge Basic	GPU Workstation	GPU Rack server
1ch	2ch	25ch or higher	50ch or higher
NPU	NPU	GPU	GPU
-	-	-	-
Rockhip RK3588S	Rockchip RK3588	Intel® Core i7 or higher	Intel® Xeon® Silver or higher
-	-	NVIDIA Geforce RTX3090*2way	NVIDIA Quadro A5000*4way
8GB	16GB	32GB or higher	64GB or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

4IND 포인드(주)

SOREST

mekong link

art

MYTRAFFIC
SMART CITY SOLUTIONS

BEOMHOIT

REVELATION
PRODUCTIONS

EM SERVICES

Japan

SOREST

Japan

Vietnam

mekong link

Vietnam

Malaysia

art
active robotics technologies

MYTRAFFIC
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PRODUCTIONS

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BOM®
P L A T F O R M