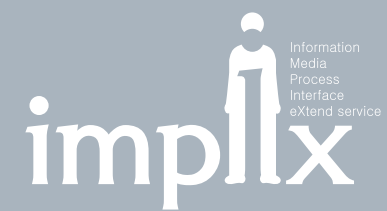


IMPIX

Your Tailored Success Partner for a Successful AX(AI Transformation) in Manufacturing





Your Tailored Success Partner for a Successful AX(AI Transformation) in Manufacturing

CEO GREETING

Greetings,
IMPIX is a leading specialist in AI autonomous control, pioneering the AX (AI Transformation) across the manufacturing, energy, and public infrastructure sectors. Our expertise is built upon more than two decades of accumulated technology and know-how from the front lines of IT and industrial manufacturing.

Through extensive collaboration with diverse industries, we have been realizing an "AI-driven autonomous manufacturing environment." Centered on our proprietary data-driven AI platform, A²LAB, we enhance the autonomy and connectivity of manufacturing sites, enabling the seamless integration of processes, equipment, and operations. Furthermore, we are expanding our business into the energy transition sector to support critical initiatives such as RE100 implementation and the achievement of carbon neutrality.

By fusing cutting-edge technology with on-site practicality, and fostering an organizational culture of trust and collaboration, IMPIX is committed to creating a sustainable industrial ecosystem. We will be your strategic success partner, empowering you to secure a global competitive edge.

Thank you.

IMPIX Inc. CEO Lee Sangho

ABOUT US

Brand Story

As specialists in autonomous manufacturing, we are dedicated to a philosophy of mutual growth that transcends technology. We realize this by delivering maximum value to our customers, the highest value to families, and the best value to society through our deep-seated commitment to fulfillment and sharing.

Company Overview

Establishment Date : January 10, 2000

Capital : KRW 550 million

Revenue : KRW 13 billion (FY2024 consolidated financials)

Domestic and Overseas Offices : Seoul, Busan, Gwangju, Chungbuk,
Chungnam, Ochang, China

Business Domain

Smart Factory Solutions, Autonomous Manufacturing Solutions

Smart factory construction and system integration

Manufacturing AX strategy consulting

System operation and maintenance

Energy efficiency optimization, Data standardization

PARTNERS

Pharmaceutical Bio



Food/Cosmetics



Automotive



A proven track record of serving over 100 clients of all sizes, from large corporations to SMEs, across diverse industries.
Successfully completed more than 700 Smart Factory and Autonomous Manufacturing projects and solution deployments.



Semiconductors
Secondary Batteries
Advanced Materials



Others



HISTORY

- **Chong Kun Dang**
Metaverse Factory Implementation
- **Chong Kun Dang Healthcare**
Shipment Traceability System Development
- **Daedong Gear**
MES Implementation
- **HKC**
Pilot Program for Advanced Manufacturing Robot Deployment(Hyundai Robotics)
- **LAKE MATERIALS**
Smart Factory Expansion Project
- **COSMAX**
Data-driven Production Information Management System for POP System Advancement
- **Daedong Door**
Leading Smart Factory & MES Implementation
- **HKC**
Jidoka System Implementation

- **Soya Greentec**
Big Data & MES Implementation
- **Rainus**
Big Data & MES Implementation
- **HKC**
PLM & TMS Implementation
- **Daesang Wellife**
Smart HACCP
- **HC Global**
Big Data & MES Implementation
- **Huons N**
Big Data & Smart HACCP
- **Dae Dong Gear**
Big Data & MES Implementation

2024

2023

2022

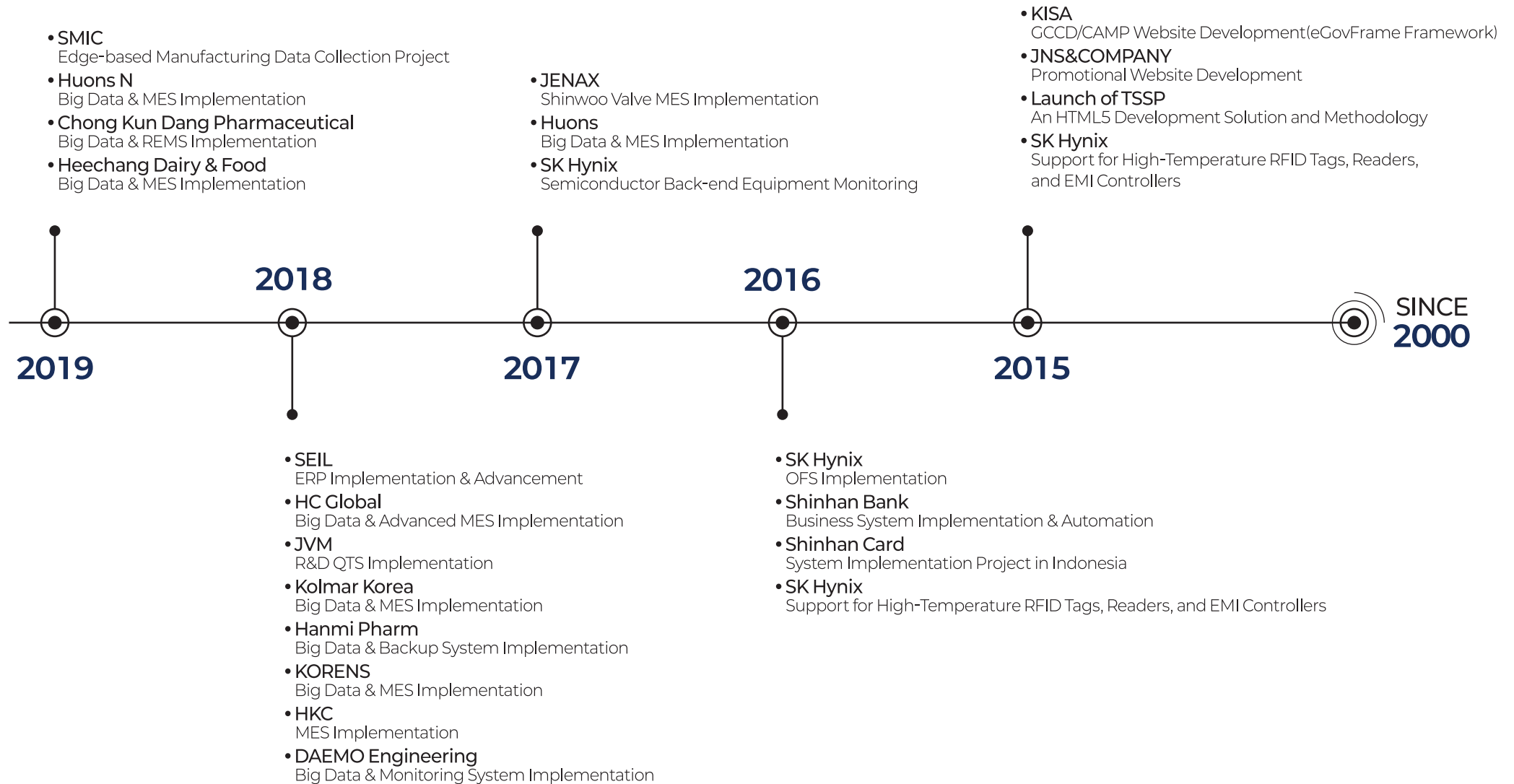
2021

2020

- Self-Adaptive AI System for the Lifecycle Management of Secondary Battery Modules & Packs
- Intelligent AI Worker for Manufacturing powered by a LMM
- AI-based Lifecycle Tracking for Solar Module Recycling & Reuse
- Manufacturing Data Standardization Project
- Leading Smart Factory Implementation Project
- **Daedong Door**
Mexico Facility MES Implementation Project
- **KORENS**
Autonomous Factory Implementation Project

- **HKC**
AI-powered Predictive Quality for Core Manufacturing
- **KORENS**
Intelligent Design & Inspection for EGR Manufacturing
- **HUNG-A Tires**
Intelligent SCM
- **Kwangjin Machinery**
Predictive Maintenance
- **NANO IT**
Impregnation Quality Prediction
- **Daehyun Hitech**
Injection Molding Process Optimization
- **Chong Kun Dang**
AI-driven Manufacturing Analytics
- **CM Towel**
Weaving Equipment Optimization
- **HC Global**
AI for HACCP Process Control
- **TKG Eco Material**
Dyeing Process Optimization

- **SK Biotech**
Big Data & MES Implementation
- **KORENS**
Big Data & AI-powered Automatic Control
- **Chong Kun Dang Pharmaceutical Corp**
Big Data & REMS Implementation
- **Yuhan Kimberly**
MES Implementation
- **JVM**
VMS and DPS Implementation
- **Chong Kun Dang Health**
MES Implementation
- **HKC**
Big Data & Advanced MES Implementation



SUCCESS STORY | Pharmaceutical & Bio



Chong Kun Dang Metaverse Factory

We developed a metaverse factory that virtually replicates cleanroom-based manufacturing processes. The system provides integrated monitoring and autonomous equipment control, enabling real-time remote intervention in response to operational anomalies.



Huons Intelligent Factory Implementation

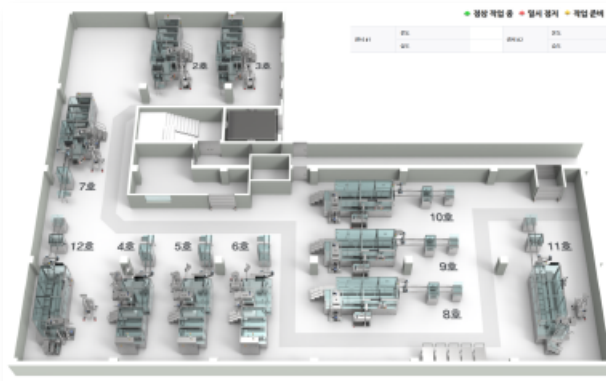
We transformed the client's operations by digitizing all previously manual processes and implementing a big data solution. The new intelligent factory enables automated data collection and provides predictive analytics to determine how process fluctuations affect final product quality.



SK biotek Electronic Manufacturing Instruction & Record System

We digitized the client's extensive paper-based workflow by implementing an Electronic Manufacturing Instruction & Record System. This solution accelerates the entire digital documentation process, managing all records from recipe creation to batch qualification.

SUCCESS STORY | Food / Cosmetics



Cosmax

Production Traceability & Management System

Replaced a manual workflow with a digital system that enables real-time process data collection, pressure deviation detection with alarms, and LOT-based quality control. The solution also optimizes equipment maintenance cycles by analyzing operational history.



Huons N

Smart HACCP with Immutable Logging

Implemented a Smart HACCP monitoring system across the entire value chain, from raw material purchasing to production and sales. The system automatically records Critical Control Points (CCPs) and manages all related data, including corrective actions, using an immutable architecture to guarantee data integrity.



Kolmar Korea

AI-powered Process Analysis System

Implemented an AI system that automatically identifies and classifies the sequence of sub-processes occurring within manufacturing tanks. Through historical data analysis of each process, this solution enables data-driven process improvement and facilitates efficient root cause analysis.

SUCCESS STORY | Automotive



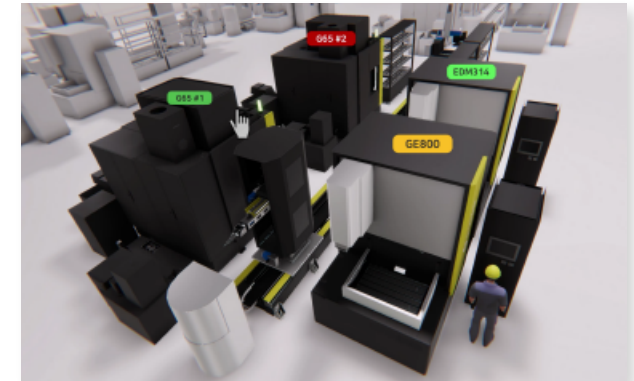
KORENS Autonomous Factory

Realized a complete autonomous factory by implementing a standard framework based on an AAS model, Digital Twin technology, and an AI-powered autonomous control system. This project, which includes an integrated ESG command center, achieves an autonomous manufacturing environment through enterprise-wide operational optimization.



Korea Polytechnics Intelligent Factory

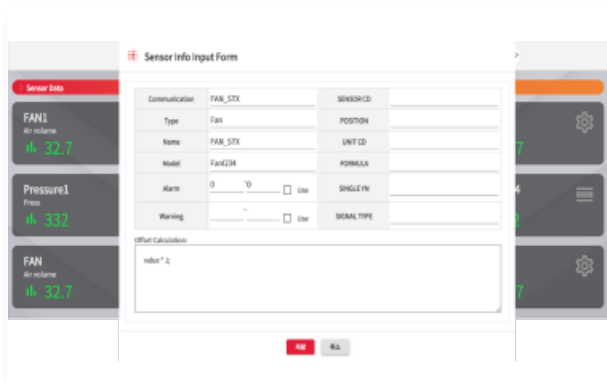
Constructed an intelligent factory by digitizing all manual processes and implementing a big data solution. This transformation enables automated data collection and logging, along with predictive analytics to foresee the impact of process changes on product quality.



Woosung Precision K-Smart Lighthouse Factory

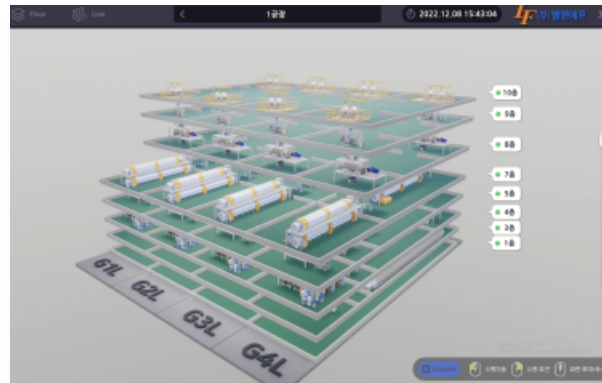
We realized a smart factory by implementing an FMS for the integrated, unmanned automation of EDM and cutting processes. The system leverages AI for operational optimization and equipment simulation, enabling predictive capabilities and proactive responses to potential issues.

SUCCESS STORY | Others



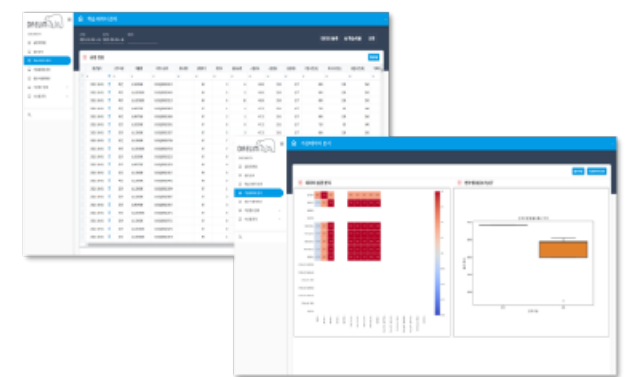
SK hynix Data Lake

We delivered our D² (Data Lake) solution for SK hynix's High-Bandwidth Memory (HBM) manufacturing process, implementing an AI-based environment for comprehensive data collection, analysis, and utilization. To achieve unified data acquisition, we also installed our proprietary 'NonSECS Box' on equipment lacking standard communication protocols, enabling integrated data collection from all facility-wide equipment.



L&F Intelligent Factory

We constructed an intelligent factory by digitizing all manual processes and implementing a big data solution. This transformation enables automated data collection and provides predictive analytics to determine how process variations affect final product quality.



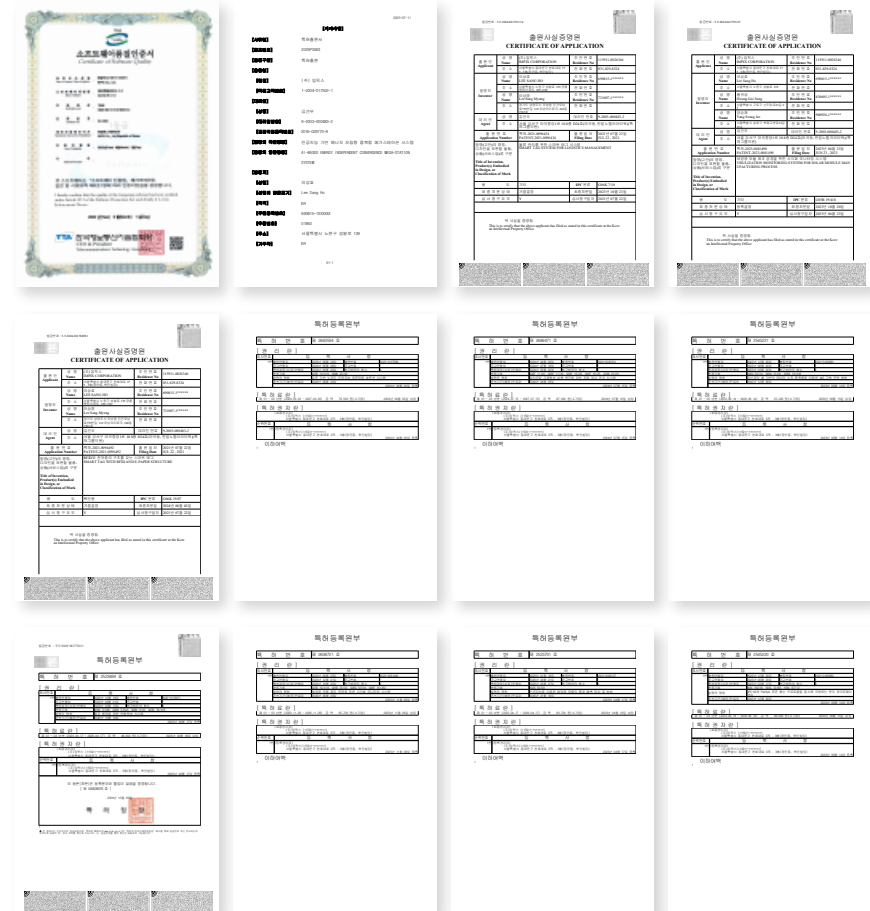
Daelim B&Co AI Quality Prediction System

Developed an AI-powered system that utilizes equipment and environmental data to optimize the sanitary ware forming and drying processes. The system infers ideal process conditions and provides real-time predictions of finished product quality based on an item's specific location during the drying phase.

CERTIFICATION

Technological Advantage

- GS (Good Software) Certification (Grade 1) for A²LAB BI v1.0
- AI-based, Energy Self-Sufficient, Converged Megastation System
- Raw Data Recovery System for Industrial IoT (IIoT) Time-Series Databases
- Automated Monitoring and Management System for Multimodal Machine Learning Execution Engines
- Apparatus and Method for AI-based Anomaly Detection in Plastic Injection Molding Processes
- Question-Based, No-Code AI Standard Model Solution
- Visualization & Monitoring System for Solar Module Manufacturing Processes
- Apparatus and Method for Predicting Solar Module Quality using Artificial Intelligence
- Tabbing Process Equipment Capable of Rear-Side Imaging of Solar Cells
- Method for Implementing and Operating an AAS using an Asset Administration Shell-based Data Collection Platform
- Edge Gateway Device Supporting both OPC-UA and Pub/Sub Standard Communication Protocols
- Inter-Enterprise Collaboration Solution and Method
- Federated Learning System for Manufacturing Environments
- AR-based Smart Factory Monitoring System using Eye-Tracking Technology
- System for Managing and Integrating POP/MES Data with Equipment Management Data via Web HMI

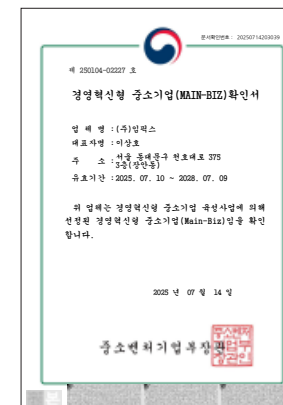


CERTIFICATION

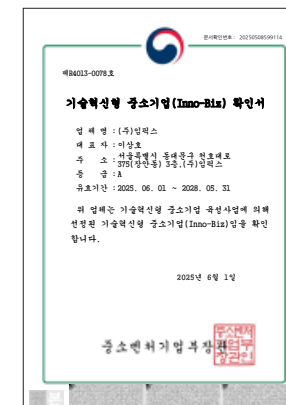
Corporate Certification



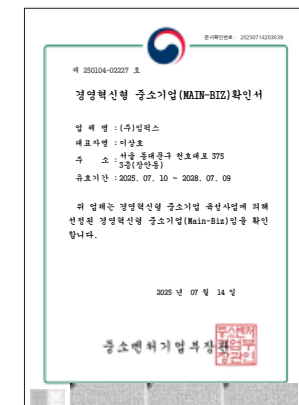
AI Factory Solutions Specialist



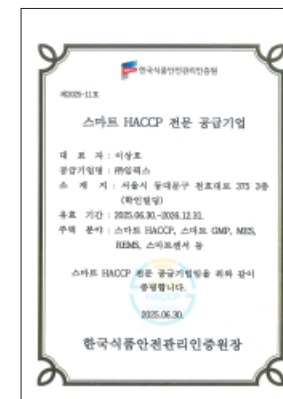
Certified as a Main-Biz



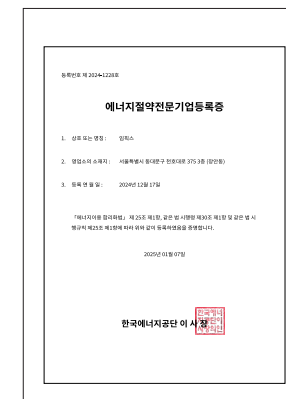
Certified as an Inno-Biz



Certified Corporate R&D Center



Certified Smart HACCP Solutions Provider

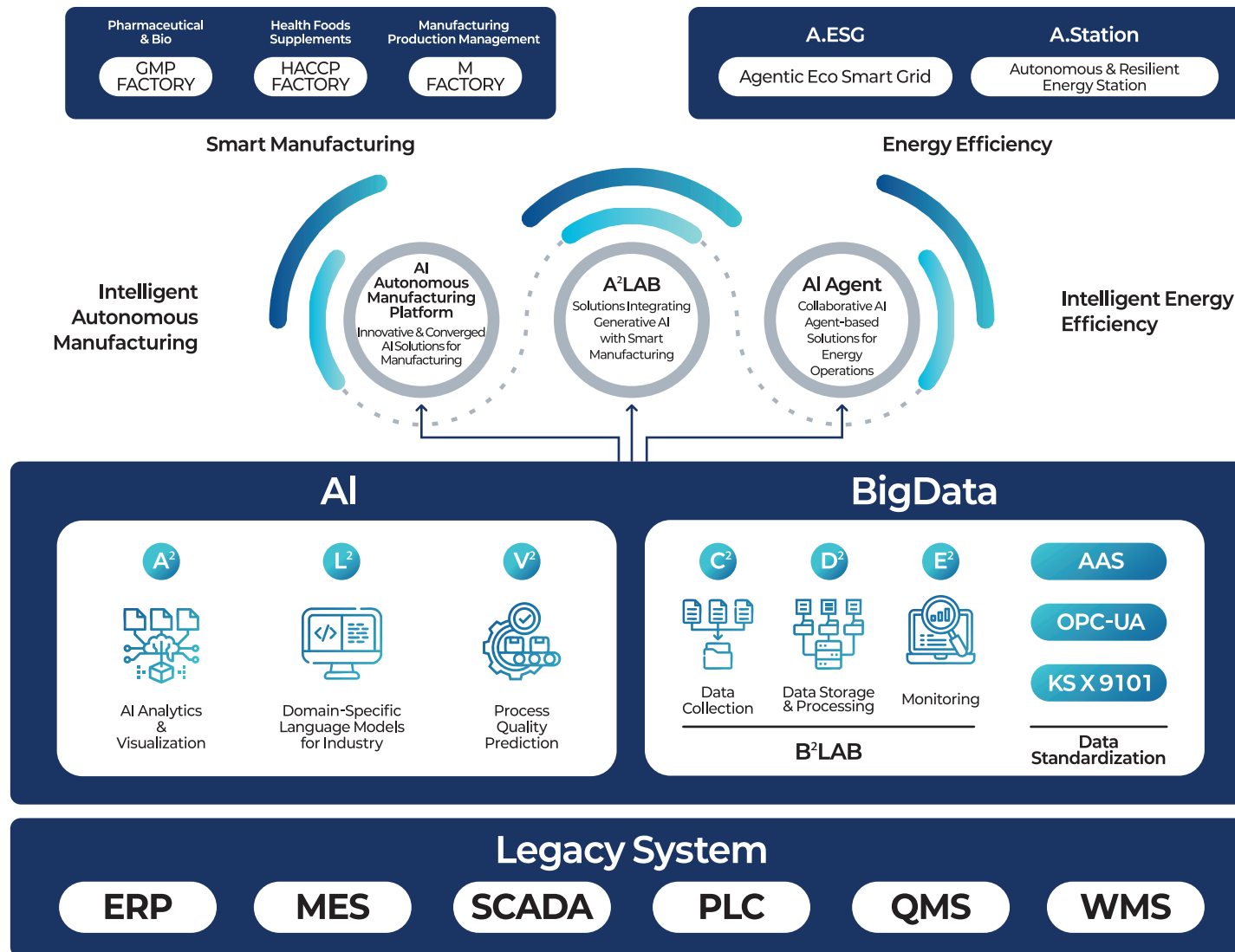


Registered as an ESCO



Received a Commendation for Excellence in Smart Factory

SOLUTION MAP



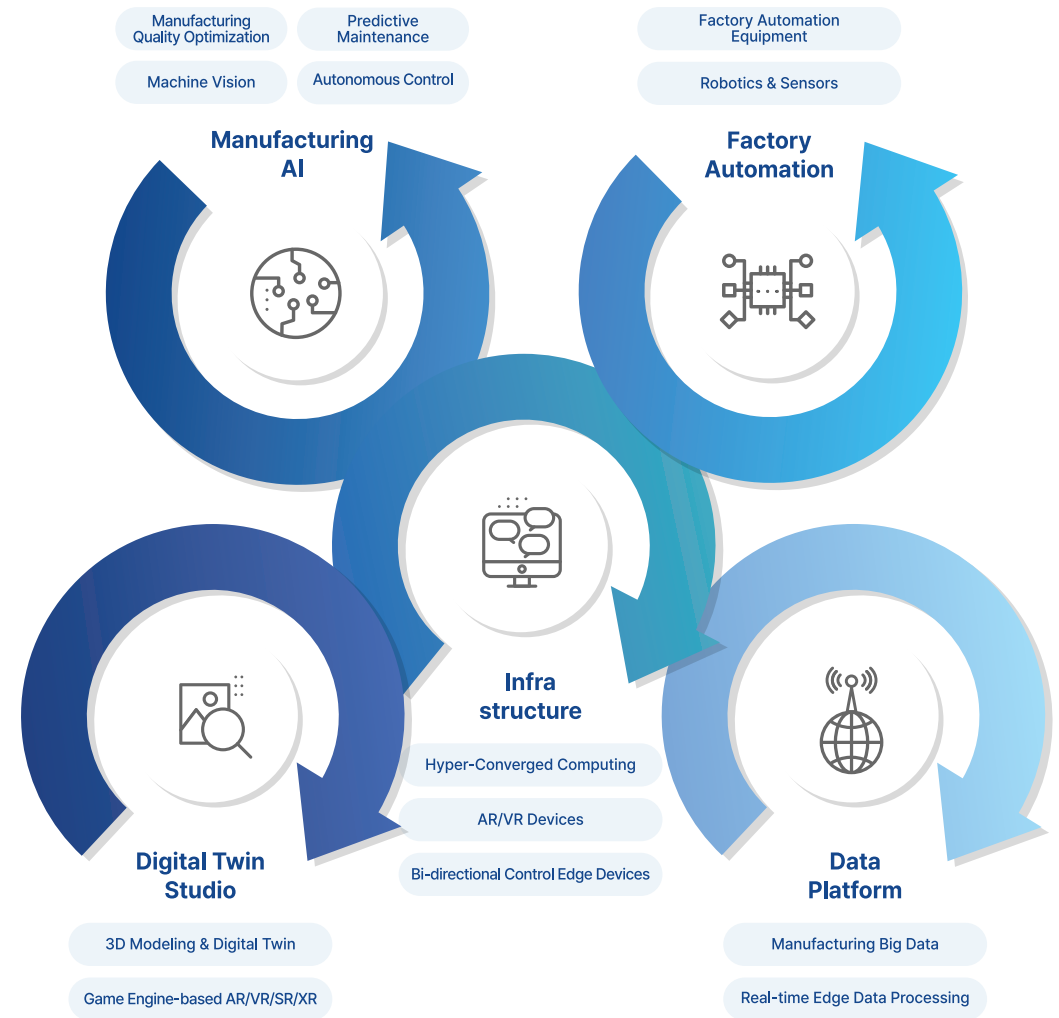
ALL-IN-ONE

The Challenge Customers Face

Despite AI Transformation (AX) becoming essential, most manufacturing environments still face fragmented data lifecycles caused by complex, siloed systems. This gap limits the ability of AX investments to deliver measurable business outcomes, making true equipment optimization and autonomous manufacturing a major challenge that demands a more sophisticated approach.

Our Solution

With over 20 years of proven expertise, IMPIX delivers an All-in-One, manufacturing-focused service that drives complete AX transformation. From building robust big data foundations to developing and operationalizing AI models, we offer a true end-to-end solution empowering small and mid-sized manufacturers to achieve smarter, faster, and more autonomous operations.



ALL-IN-ONE

A²LAB



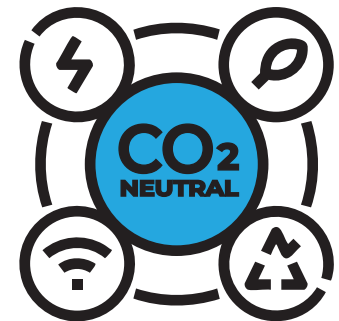
Integrated Solutions for Innovation
in the Manufacturing Industry

AI Agent



A Solution that Combines Generative
AI with Smart Manufacturing

A.ESG

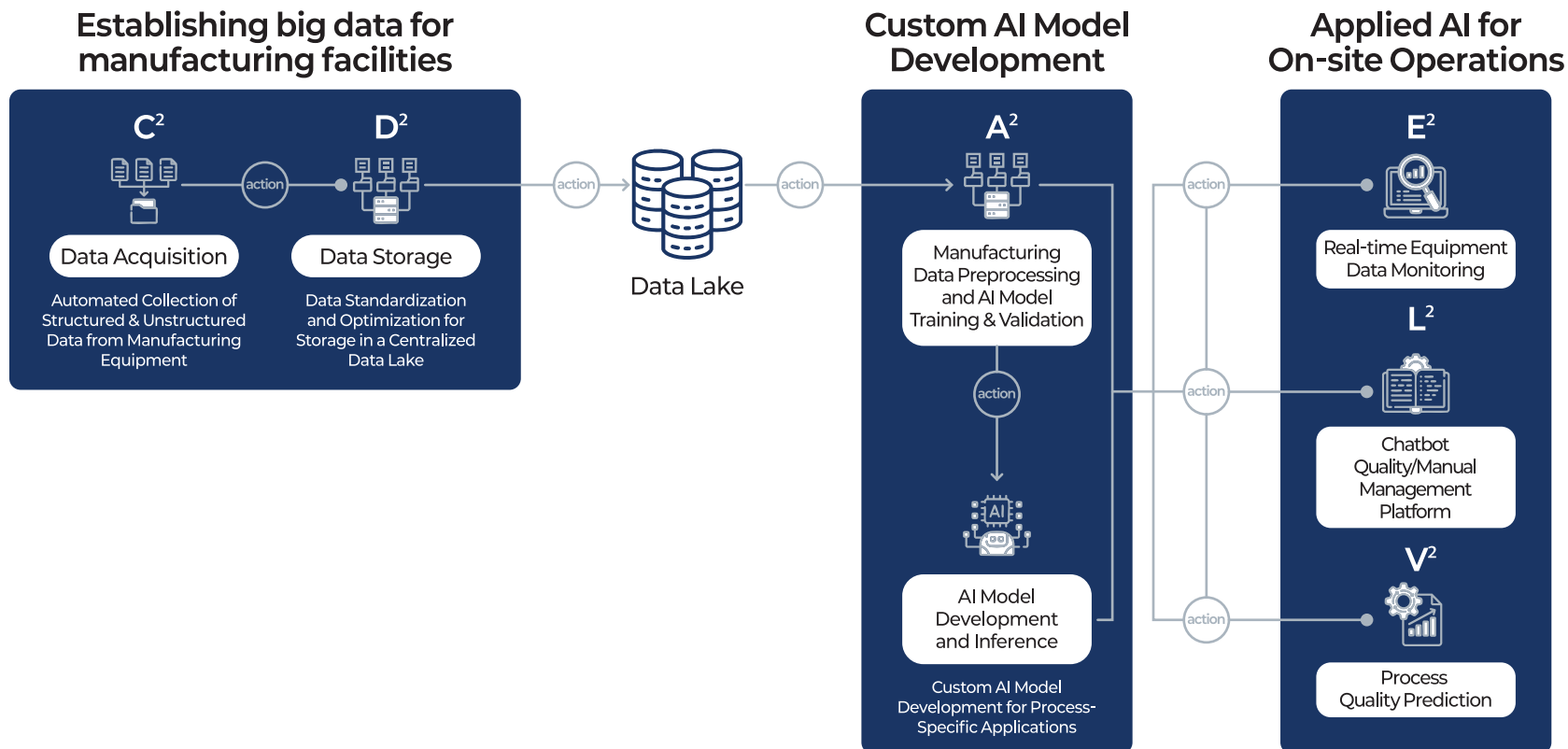


Energy Operation Solutions
Based on AI Agent Collaboration

ALL-IN-ONE

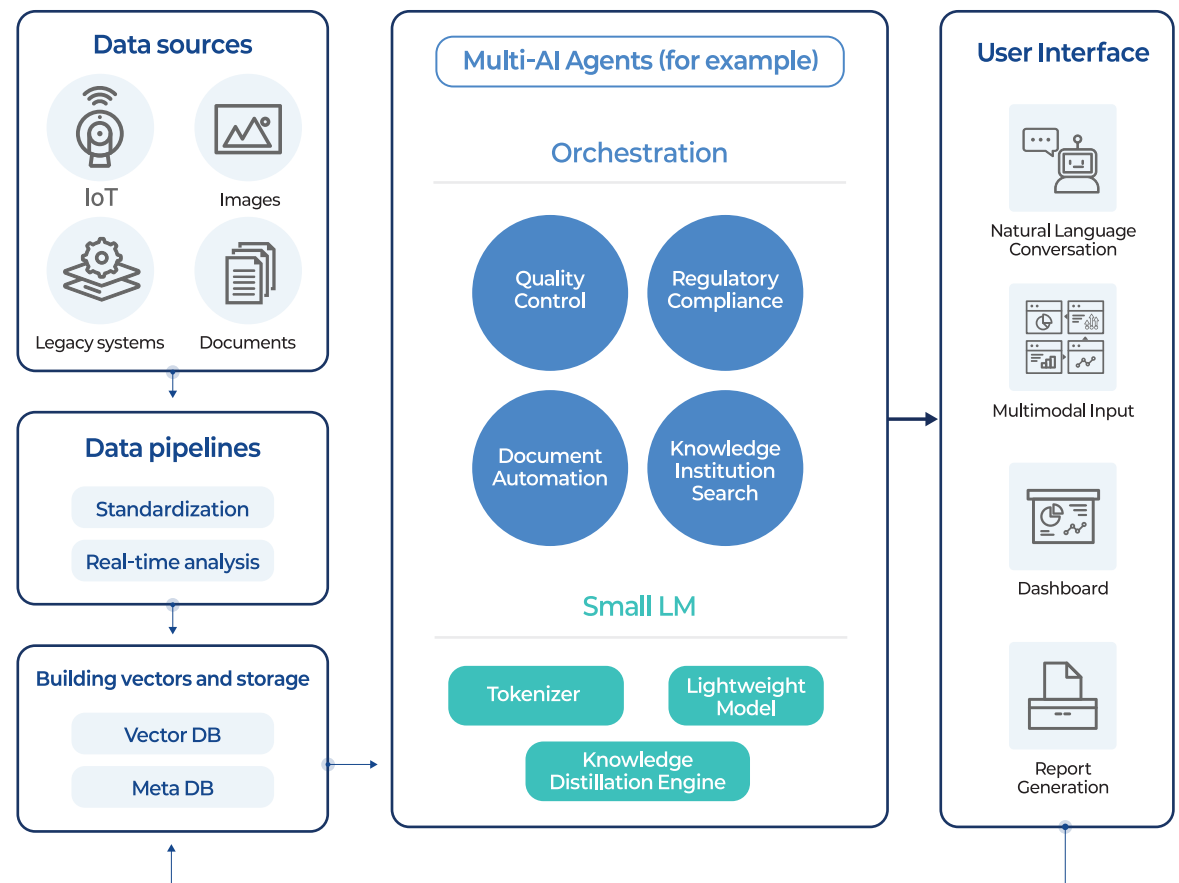
A²LAB | Integrated Solutions for Innovation in the Manufacturing Industry

A²LAB is an All-in-One platform that manages the entire AI Transformation (AX) journey, from establishing the initial data infrastructure to implementing AI-powered autonomous control. Built on a modular architecture, it allows for flexible adoption and seamless, gradual scaling to meet the unique needs of the manufacturing environment.



ALL-IN-ONE AI AGENT Collaboration Platform

The AI Agent Collaboration Platform is an intelligent AI system that autonomously analyzes and utilizes various text, image, and equipment data from manufacturing sites, based on generative AI technology. It functions as the core engine for manufacturing AX transformation, serving as a next-generation manufacturing intelligence framework that integrates generative AI, multimodal AI, edge AI, natural language interfaces, and digital twin technologies.



ALL-IN-ONE

A.ESG | Agentic Eco Smart Grid

A.ESG is an autonomous energy management system that deploys AI agents for production, consumption, forecasting, and storage at each equipment unit to predict and optimize the plant's overall energy flow in real time.



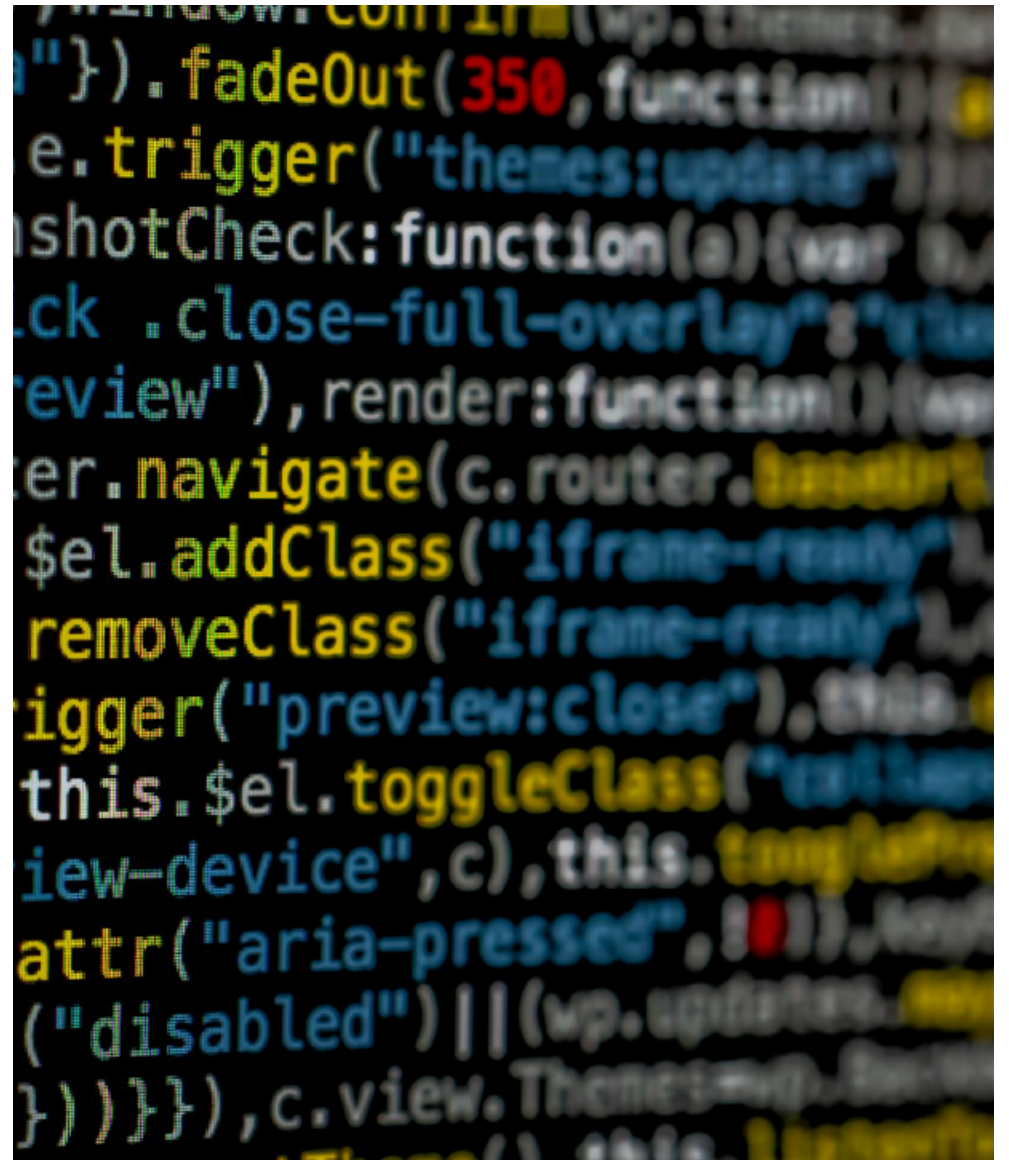
BIG DATA

The Challenge Customers Face

Manufacturing sites generate vast amounts of data from diverse, heterogeneous systems such as ERP and MES. However, this data exists in disparate formats and lacks interoperability, making meaningful analysis challenging. As a result, AI adoption faces significant hurdles due to costly and time-consuming data preprocessing, integrity assurance, and real-time processing requirements.

Our Solution

IMPIX offers a big data platform that optimizes manufacturing equipment data by enhancing interoperability through standardization technologies. This enables the creation of an automated manufacturing data pipeline, eliminating repetitive and costly data processing tasks while ensuring a seamless flow of analysis-ready data.



BIG DATA

Data Standardization

IMPIX's Data Standardization solution connects siloed data from disparate equipment and systems by implementing a standard data structure based on industry protocols such as AAS, OPC-UA, and KS X 9101. This builds a future-ready architecture that enables seamless integration with AI analytics and ESG compliance systems.



AAS

Data Structuring
and
Hierarchization



Data
Definition



OPC-UA

Standardizing
Different Formats
for Each Facility



Facility
Connection

KS X 9101

Standard Integration
with Heterogeneous
Systems



Standard
Linkage

Key Features and Advantages

Based on Global
and National Standards



Designed according to
trusted standards such as
IEC and KS, ensuring
compatibility with both
global supply chains and
domestic systems

Guarantees interoperability
between solutions



Connectivity between
solutions is guaranteed
through AAS-based asset
information structuring
templates.

Intuitive
Web Modeling UI



AAS can be created via a
drag-and-drop interface,
enabling users without
specialized expertise to
generate them easily

Automatic
Communication Mapping



Automated OPC-UA and
AAS ID linkage simplifies
equipment-system
communication

Standardized
Message Integration



KS X 9101-based
messaging enables
standard integration of
heterogeneous systems

Foundation for
Global Expansion



Integrated operation
system supports
multi-industry connectivity,
enabling global expansion

BIG DATA

B²LAB (Broad X Bigdata)

It is a big data optimization platform that supports the collection, storage/processing, and monitoring of data owned by users. It integrates diverse structured, unstructured, and semi-structured data generated across the enterprise to securely capture raw data, and provides various modules and platforms to enhance the usability of the integrated data.

Optimization of Manufacturing Data and Big Data Platform

$$B^2LAB = C^2 + D^2 + E^2$$

C²

Complex x Collaboration

- Data collection and integration
- Support for OPC-UA and Automation ML
- AAS Profile Implementation
- Kafka-based Messaging System
- Data Transmission via Edge Computing
- Industrial Protocol Conversion

D²

Datalake x Dataflow

- Diverse Data Type Management
- Storage for Structured, Unstructured & Time-Series Data
- Data Catalog Management
- Interactive Querying & Sandbox Environment
- Purpose-driven Data Transformation
- Data Reliability & Security Management

E²

Enterprise Reporting x Expression

- Real-time monitoring system
- High-speed data visualization
- Data exploration and mining
- Exploration of ML/DL models
- Intuitive user interface
- Visualization of UI-based analytical results

Key Features and Advantages



Proactive Detection & Resolution of Potential Data Issues



Complex Pattern Recognition & Hypothesis Refinement



Real-time Scalability & Stability



Data Processing Optimized for Statistical Inference & Predictive Modeling



Unified Operational Framework for Integrated Management

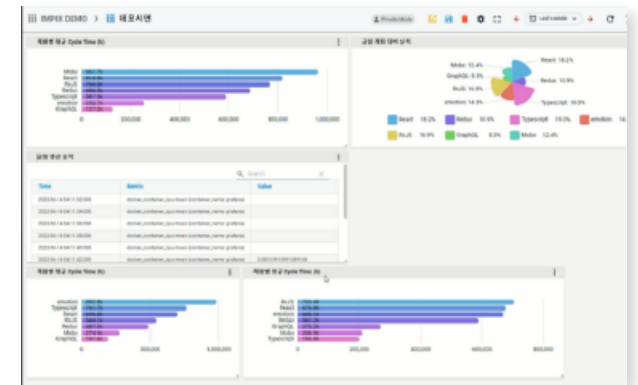
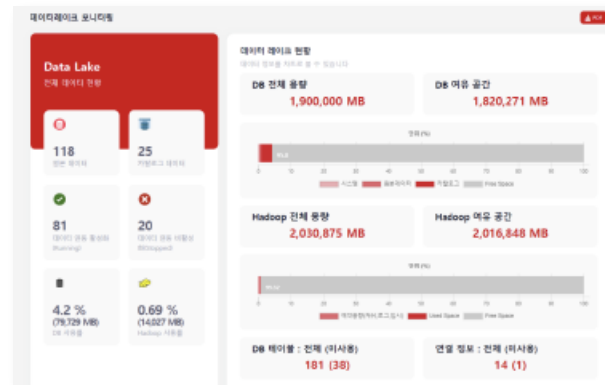


Unified Collection & Standardization of Data from Heterogeneous Sources

BIG DATA

B²LAB | Key Features

No.	장비명	장비ID	장비유형	장비위치	장비상태	비고
1	Machine1	1000001	가공기	1000001	정상	
2	Machine2	1000002	가공기	1000002	정상	
3	Machine3	1000003	가공기	1000003	정상	
4	Machine4	1000004	가공기	1000004	정상	
5	Machine5	1000005	가공기	1000005	정상	
6	Machine6	1000006	가공기	1000006	정상	
7	Machine7	1000007	가공기	1000007	정상	
8	Machine8	1000008	가공기	1000008	정상	
9	Machine9	1000009	가공기	1000009	정상	
10	Machine10	1000010	가공기	1000010	정상	
11	Machine11	1000011	가공기	1000011	정상	
12	Machine12	1000012	가공기	1000012	정상	
13	Machine13	1000013	가공기	1000013	정상	
14	Machine14	1000014	가공기	1000014	정상	
15	Machine15	1000015	가공기	1000015	정상	
16	Machine16	1000016	가공기	1000016	정상	
17	Machine17	1000017	가공기	1000017	정상	



Data Collection & Integration(C²)

Enables fast and reliable data collection from diverse manufacturing equipment and sensors, ensuring data compatibility through seamless protocol conversion

- Real-time Data Collection via Standard Protocols
- AAS-based Structuring of Equipment Data
- Edge-powered Integration with IT Infrastructure & Cloud

Data Storage & Processing(D²)

We process and standardize collected data to create a robust foundation for various applications, including AI analytics, visualization, and system integration

- Unified Processing & Storage of Structured and Time-Series Data
- Automated, Purpose-driven Dataset Creation for AI, Visualization, and Analytics
- Systematic Metadata Management via a Data Catalog

Data Monitoring(E²)

Offers intuitive visualization of on-site manufacturing data, supported by AI-powered analytics for anomaly detection and predictive insights

- Real-time, Unified Monitoring of Diverse Equipment and Sensor Data
- High-speed Data Visualization with an Intuitive Dashboard UI
- ML/DL-powered Anomaly Detection and Pattern Analysis

Artificial Intelligence (AI)

The Challenge Customers Face

Even when AI is successfully implemented, a shortage of AI professionals can make its operation and maintenance difficult, preventing it from becoming established in the field. Moreover, because production issues are often multifaceted and interrelated, applying AI effectively to tasks such as quality prediction and defect analysis in real-world manufacturing environments remains a significant challenge.

Our Solution

IMPIX's AI solutions develop AI models using data collected from manufacturing sites to manage inference and AI systems for quality prediction, process optimization, and predictive maintenance. We offer a range of AI analysis functions, including data preprocessing, exploratory data analysis (EDA), model training, analysis, reasoning, and visualization, to effectively address on-site challenges.

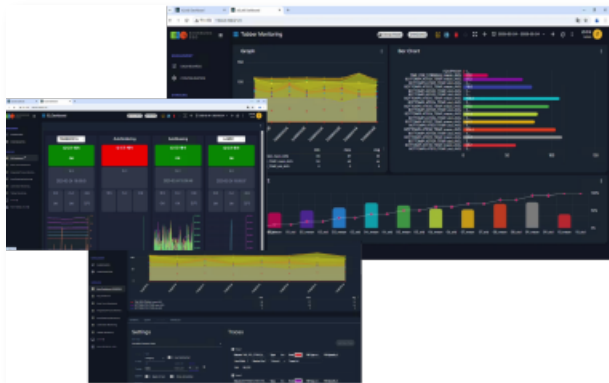


Artificial Intelligence Solution



A²

Autonomous x A.I



Artificial Intelligence
Analysis and Visualization

L²

LLM x Layer

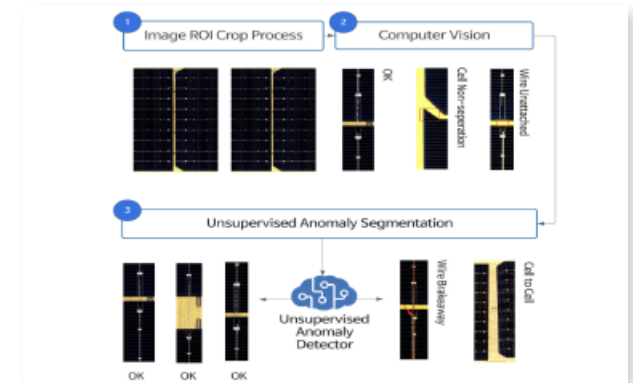


Industry-Specific
Language Model



V²

Vision x Validation

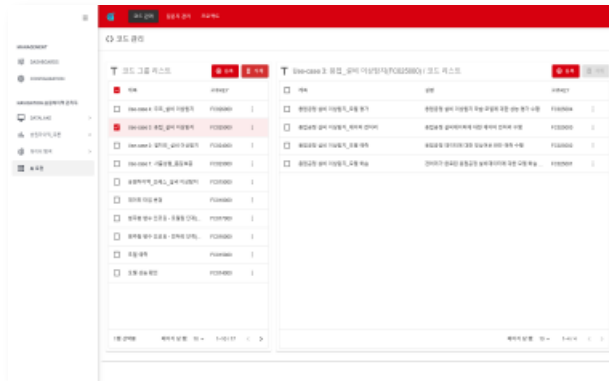


Vision-Based
Process Quality Prediction

Artificial Intelligence(AI)

A² (Autonomous x A.I) | Key Features

IMPIX's AI visual analysis solution A² is a No-Code AI tool that allows users to configure analyses in a question-driven manner, similar to how an analyst would explore data. Repetitive tasks such as preprocessing and anomaly detection can be intuitively configured without coding, enabling non-experts to easily build AI models.



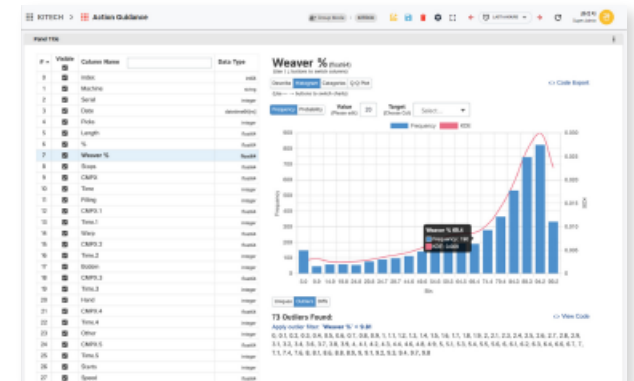
NO-CODE

Our AI modeling process supports No-Code development, allowing analysts to configure models in a question-driven manner. The question tool functions as an AI-powered assistant for data analysis, enabling analysts to intuitively perform repetitive tasks such as data preprocessing and anomaly handling without coding.



Model generation

Through No-Code question-based interactions, users can automate dataset construction and partitioning, select the most suitable machine learning algorithms, and train predictive models. This empowers on-site manufacturing personnel to easily create and utilize AI models without requiring specialized expertise.



AI Visual Analysis

AI enables data to be analyzed visually and intuitively, with results visualized from multiple perspectives to uncover hidden patterns, improve data comprehension, and enhance prediction accuracy. By integrating and restructuring heterogeneous data sources, our solution supports correlation analysis and the extraction of actionable insights.

Artificial Intelligence(AI)

L² (LLM x Layer) | Key Features

L² is a Small Language Model (SLM) specialized in industry-specific domain knowledge. It integrates with internal systems such as MES and ERP to enable knowledge graph-based search and automatic report generation. With its lightweight architecture, it can be easily adopted by small and medium-sized manufacturing companies, achieving both operational efficiency and the capitalization of organizational knowledge.



Groupware Unified Search

Integrates LLM-based search across documents and messages within groupware, including emails, meeting minutes, and work orders. Enables semantic search rather than keyword matching, allowing users to quickly uncover hidden business information.



Core System Data Integration

Connects with core enterprise systems such as ERP, MES, and PLM to search, summarize, and interpret real-time data. Users can query data and search documents in natural language without accessing each system separately.



Document Auditing

Automatically detects and tags key issues, risk factors, and pending items within business documents. Improves audit efficiency with features such as audit trail tracking, automatic highlighting, and summary reporting.

Artificial Intelligence(AI)

V² (Vision x Validation) | Key Features

V² collects and analyzes manufacturing site images and process data in real time, automatically detecting micro-defects such as scratches or contamination using AI deep learning. By integrating multimodal sensor data, it predicts quality outcomes, while its lightweight edge device-based models enable high-speed inspection and optimal condition derivation without interrupting production.

Applied AI Technologies

1. Anomaly Detection Technology

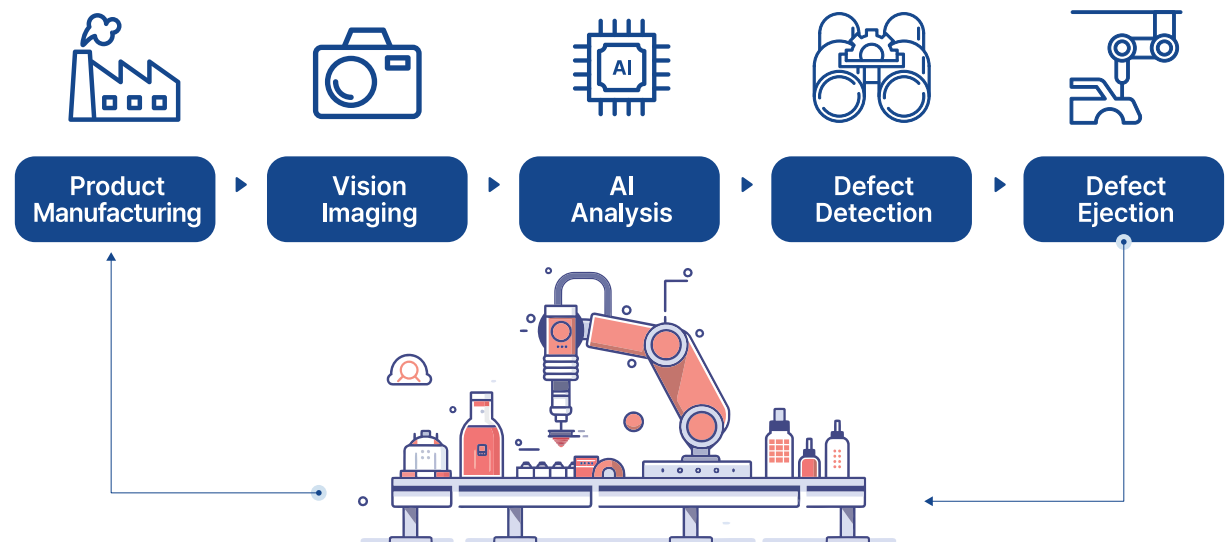
High-efficiency vision-based anomaly detection that identifies even subtle defects without prior defect learning, using AI models trained on normal images.

2. Deep Learning-Based Image Analysis

Automatic extraction and precise analysis of quality and defect information from unstructured images through CNN-based deep learning algorithms.

3. Sensor Data Fusion Technology

Integrated analysis of diverse sensor data to implement virtual sensors and enhance real-time decision-making across the entire process.



Smart Manufacturing

The Challenge Customers Face

While AI adoption for autonomous transformation (AX) is accelerating across industries, varying manufacturing characteristics by sector make it challenging to effectively implement standardized systems in production processes. This challenge is particularly pronounced in pharmaceutical and food industries, which must comply with stringent regulatory standards and maintain distinct equipment and quality requirements

Our Solution

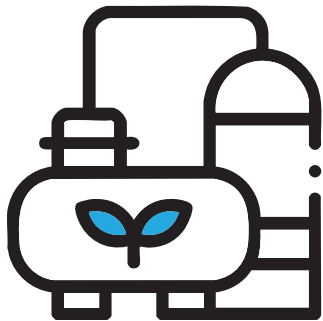
IMPIX provides not only universal smart factory solutions applicable across the entire manufacturing industry, but also specialized smart factory solutions tailored to GMP (Good Manufacturing Practice) and HACCP (Hazard Analysis and Critical Control Points) standards, supporting optimized implementation for each industry sector.



Smart Manufacturing

Smart GMP Factory

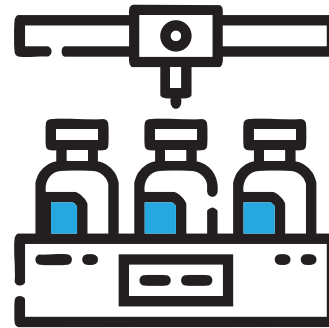
Pharmaceutical/Biotech/Nutraceuticals



GMP-Compliant Integrated
Quality Management Platform
for Process Optimization

Smart HACCP Factory

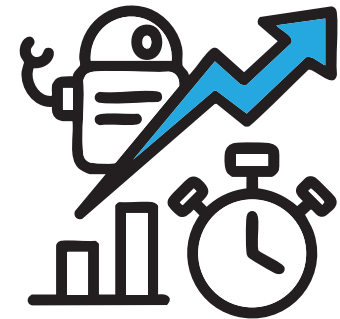
Food/Nutraceuticals



Ensuring
Safe Food Production
and Reliability

Smart M Factory

Manufacturing Production
Management

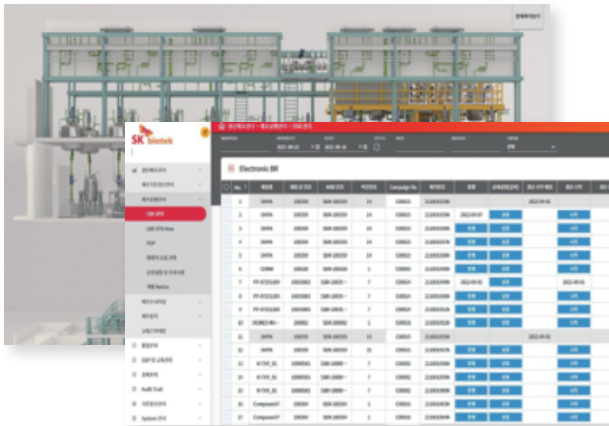


Manufacturing Production
Management System
for Quality Optimization

Smart Manufacturing

Smart GMP Factory | Key Features

Smart GMP Factory is a scalable GMP operational platform that digitalizes the entire Pharmaceutical Quality System, including EBRS. It evolves into an AI-powered real-time quality assessment and process optimization solution that simultaneously enhances both quality and productivity.



EBRS Electronic Batch Records System

Pharmaceutical & Chemical Electronic Manufacturing Record System

- Digitizes manual documentation to prevent loss and errors
- Shortens cycle time via log analysis and inventory optimization
- Ensures anti-counterfeiting and global regulatory compliance through serialization



EBS Enterprise Backup Solution

Equipment Data Standardization & Monitoring Solution

- Automated real-time collection of pharmaceutical equipment data
- Standard time-based data normalization
- Predictive equipment lifecycle and maintenance management



REMS Room Environment Monitoring System

High-Quality Manufacturing Environment Management

- Real-time environmental monitoring with immediate anomaly response
- CFR Part 21 and GAMP5 compliant
- Enhanced process stability through history tracking and anomaly detection

Smart Manufacturing

Smart HACCP Factory | Key Features

This smart solution for food and beverage companies integrates data collection and analysis technologies for intelligent equipment operations. It provides production traceability and defect analysis while sending immediate alerts when CCP limits are breached.



MES

Manufacturing Execution System

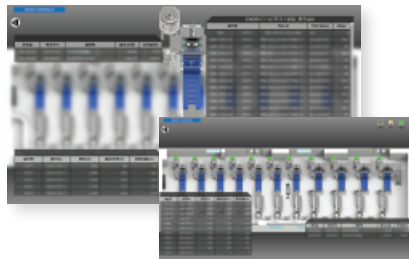
- Automated recording of equipment data, real-time tags, and PV values
- Real-time production status aggregation by line and process
- Enhanced management precision via plan-vs-actual analysis
- Foundation for unmanned automation



Process Management & Electronic Documentation

Ensures data reliability and usability through automated management of operational data

- Enhanced data reliability and usability
- Process-specific work status and setting value verification
- Complete paperless operations across all processes



Real-Time Monitoring

Real-time monitoring based on 3D visualization and dashboard systems

- Real-time status monitoring for individual equipment
- Period-based production performance analysis against targets
- Automatic updates for production start/end and field call information



LOT Tracking

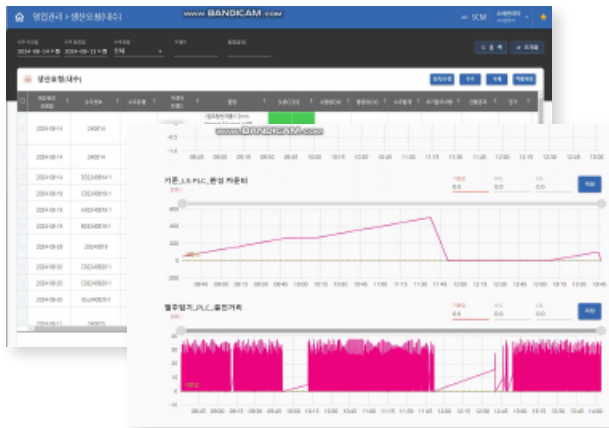
ID assignment and management for production LOT unit tracking and analysis

- Complete raw material LOT matching via incoming and weighing QR management
- LOT tracking and equipment data collection through process-equipment matching
- Production, process, and quality data verification for all products
- Finished product tracking by pallet and individual LOT

Smart Manufacturing

Smart M Factory | Key Features

Built with IMPIX's comprehensive smart factory expertise, this industry-leading production management solution enhances productivity and operational efficiency, reduces costs, and streamlines operations through real-time quality management and on-site monitoring.



MES

Manufacturing Execution System

End-to-End Manufacturing Execution System

- Real-time equipment and process monitoring
- Comprehensive data-driven production record management
- Real-time delivery of critical productivity and quality data

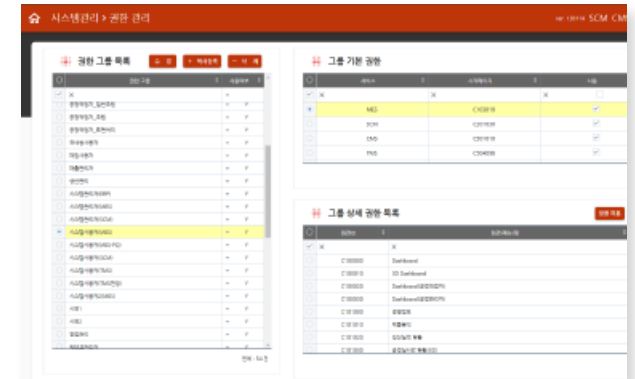


N-POP

Next generation-Point of Production

Automated Point-of-Production Management

- Auto-recording of equipment data, tags, setpoints, and process values
- Real-time production status aggregation by line/process
- Enhanced management precision via plan-actual analysis
- Foundation for unmanned intelligent operations



SCM

Supply Chain Management

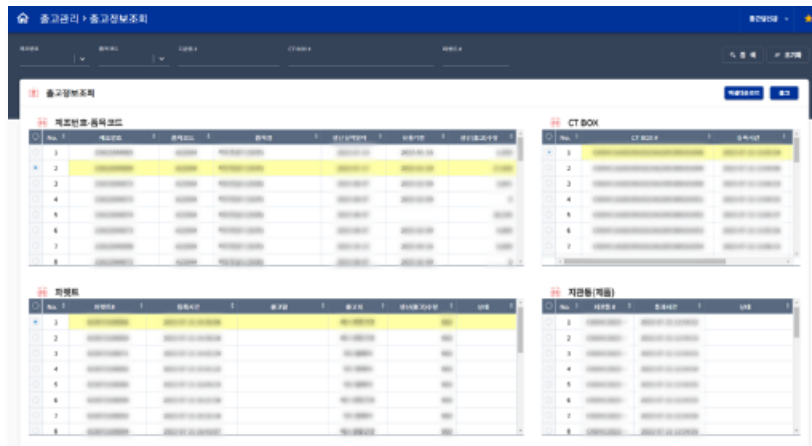
Supply Chain Optimization System

- End-to-end digitization of materials, subcontracting, and supplies
- Integrated supplier functions for orders, scheduling, and quality
- Improved supply management and delivery performance

Smart Manufacturing

Smart M Factory | Key Features

Built with IMPIX's comprehensive smart factory expertise, this industry-leading production management solution enhances productivity and operational efficiency, reduces costs, and streamlines operations through real-time quality management and on-site monitoring.



WMS

Warehouse Management System

Optimized Warehouse Management System

- Comprehensive logistics management including inventory, tracking, and operations
- Real-time digital tracking via barcode-shipment data integration
- Improved inventory accuracy and operational efficiency



QMS

Quality Management System

Optimized Quality Management System

- Standardized quality data collection and analysis throughout production
- Defect reduction through systematic quality standards and inspection management
- Enhanced competitiveness via consistent quality system deployment

Energy Efficiency

The Challenge Customers Face

Rising energy costs and operational inefficiencies are increasing manufacturing costs and operational risks. Additionally, there is a critical need for quantitative energy and carbon data solutions to comply with global carbon neutrality regulations such as CBA and RE100.

Our Solution

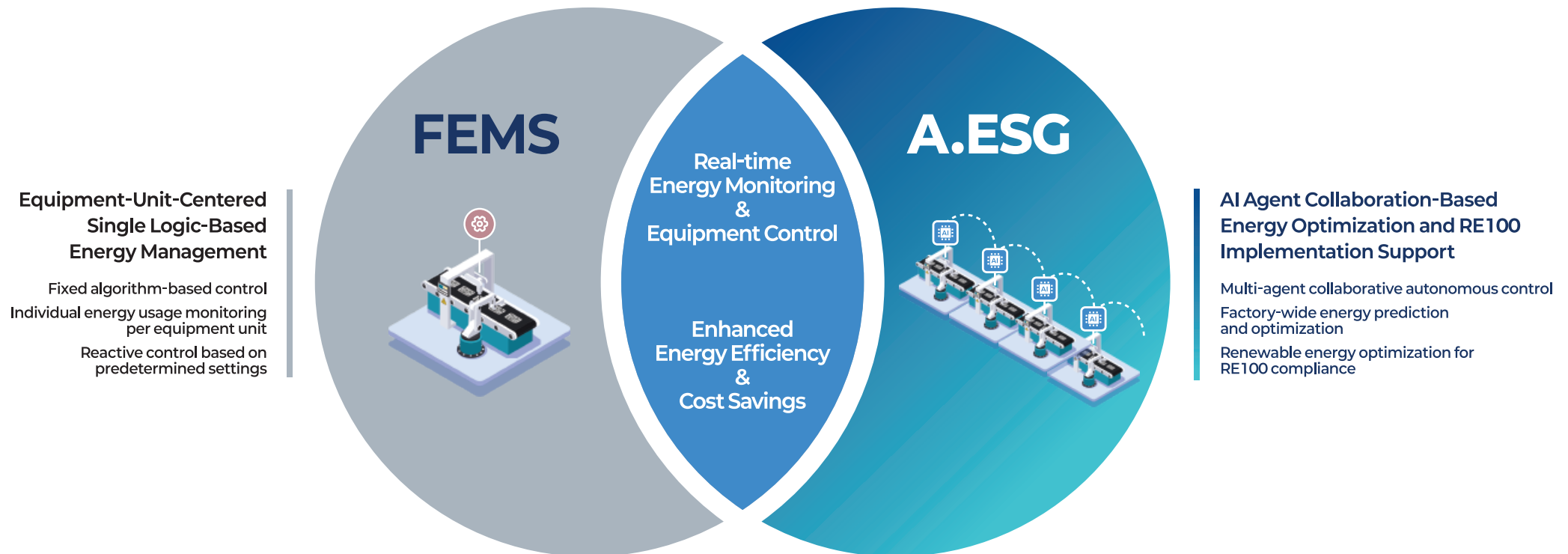
IMPIX's energy efficiency solution operates on a data-driven foundation. It collects and analyzes equipment data in real-time to optimize energy consumption control and provides automated carbon emission reporting. This enables ESG compliance and energy efficiency realization.



Energy Efficiency

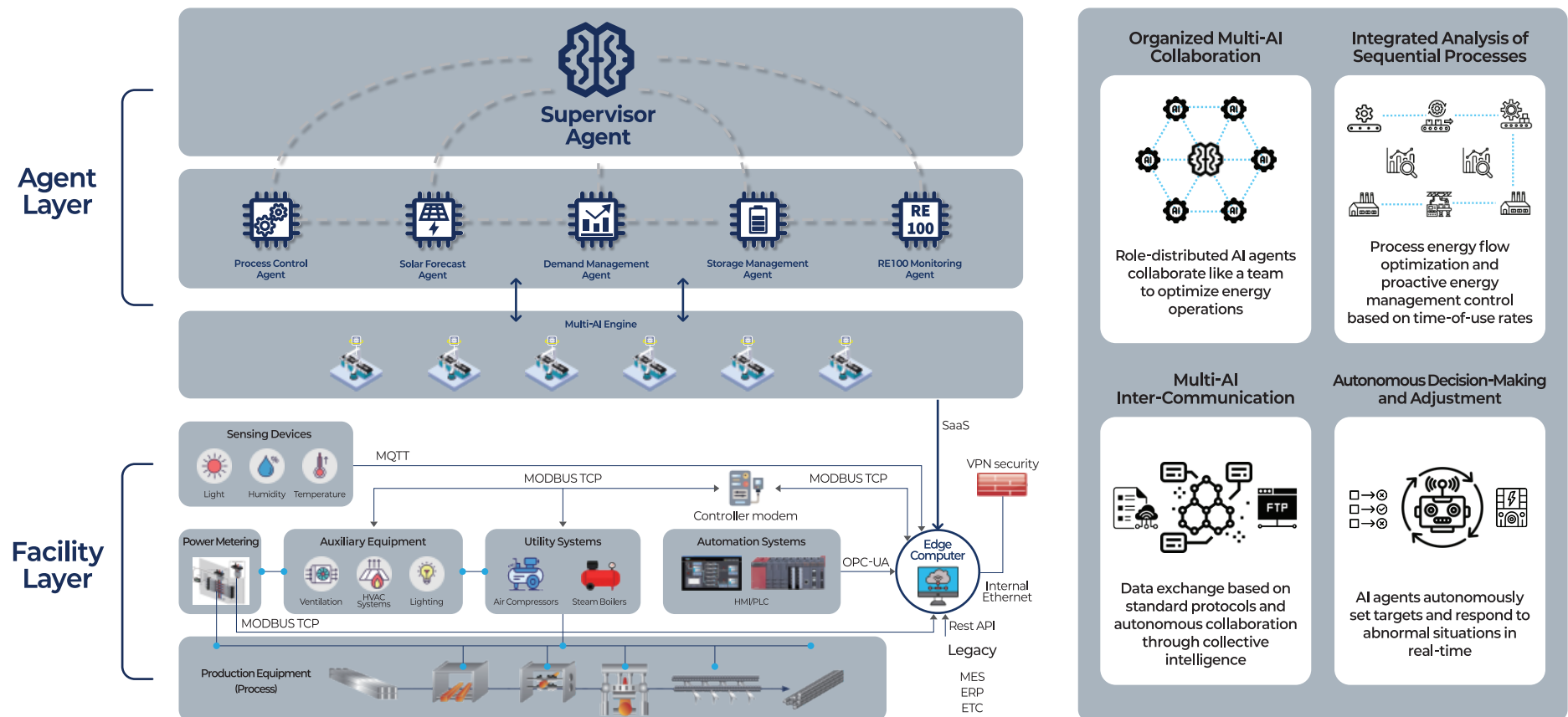
A.ESG (Agentic Eco Smart Grid)

A.ESG is an AI agent-based autonomous intelligent energy management system that optimizes energy flow throughout the entire factory by deploying AI agents as managers for each equipment unit, assigning roles such as production, consumption, prediction, and storage.



A. ESG Team

A.ESG optimizes energy flow through role-based AI agents that collaborate with each other, analyzing inter-process relationships and making autonomous decisions. It leverages collective intelligence through real-time communication based on standard protocols, providing integrated support from real-time energy prediction and control to RE100 implementation.



Energy Efficiency

A. ESG

Key Features



Integrated Control

Digital twin-based real-time visualization of power flow and energy exchange for efficient monitoring and control.



Real-time Monitoring

Integrated production and energy flow monitoring for early inefficiency identification and optimal equipment operation.



AI Energy Management

Power pattern analysis for optimized peak management and load distribution, reducing costs while ensuring supply stability.



Carbon Management

Precise process/equipment-level emission analysis with direct/indirect source distinction for proactive management and ESG compliance.



ESG Analysis

Comprehensive equipment activity and energy/carbon indicator management for greenhouse gas analysis and ESG data provision.



Energy Efficiency

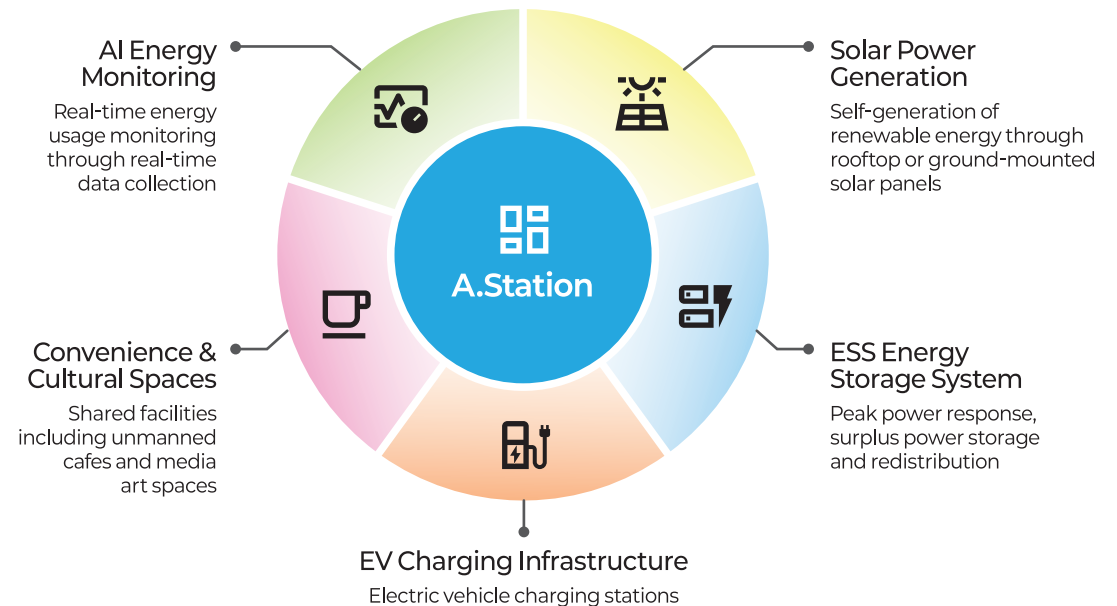
A.Station (AI-based Energy Resilient Intelligent Station)

A.Station(Autonomous & Resilient Energy Station) is an energy-autonomous infrastructure platform that designs, operates, and optimizes urban energy through artificial intelligence. It provides comprehensive AI-based support from urban energy design to operation, creating sustainable urban integrated energy infrastructure that achieves energy optimization and carbon neutrality.

A.Station Configuration Example



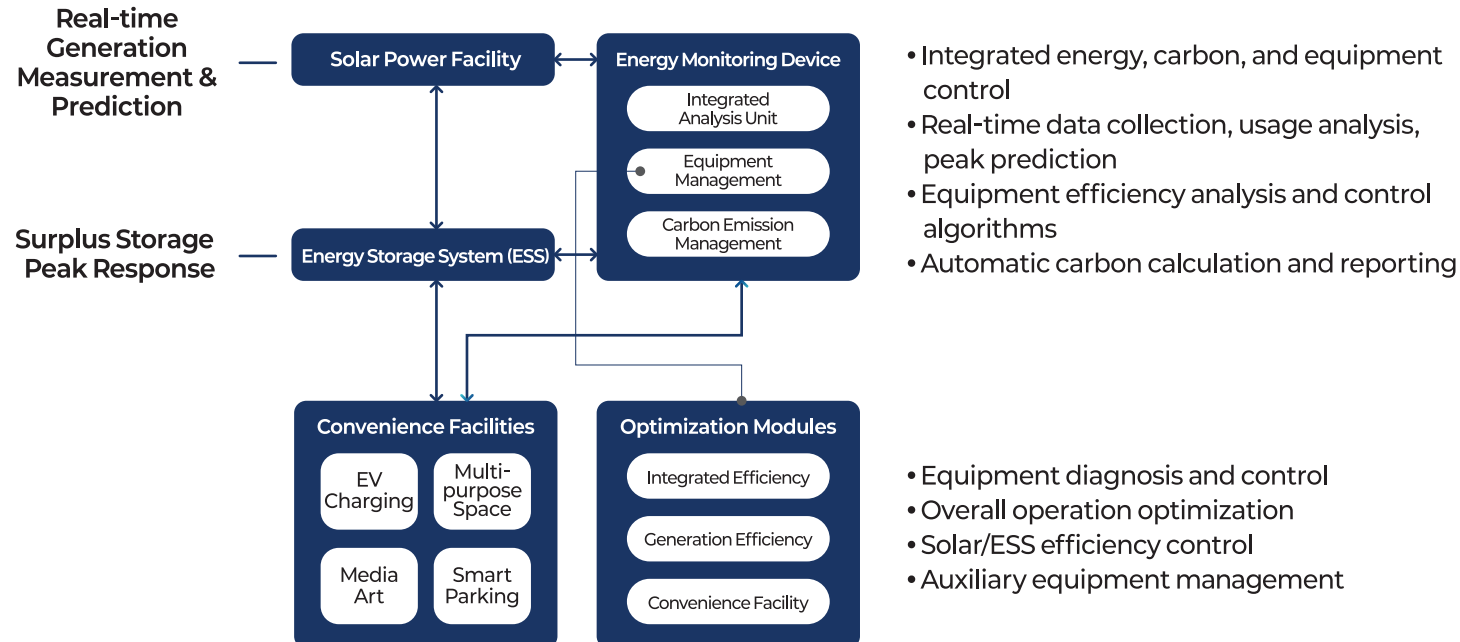
A.Station Integrated Components



Energy Efficiency

A.Station (Intelligent Energy Self-Sufficiency Station)

A.Station integrates IMPIX's core technologies AI energy engine, carbon management module, and digital twin simulation delivering end-to-end energy design, operation, and analysis on one platform. This achieves energy efficiency maximization, carbon neutrality, and sustainable smart energy ecosystem development.



Key Features and Advantages



AI Autonomous Optimization
Real-time optimal control via demand forecasting and scheduling algorithms



Real-time Energy Analysis
Data-based monitoring and anomaly detection



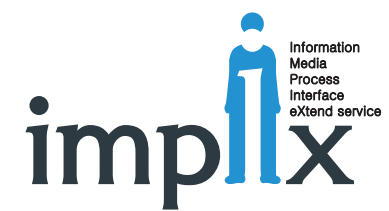
ESS/Equipment Safety
Early detection of thermal runaway and efficiency issues



Digital Twin Simulation
Virtual-based equipment optimization prediction



Public Integrated Platform
Smart space combining charging, culture, and information functions





Intelligent Information System



3F Hakin Building, 375, Cheonho-daero,
Dongdaemun-gu, Seoul, Korea

TEL. 02-745-8324 FAX. 02-745-8327

Website. www.impix.co.kr

E-mail. impix@impix.co.kr