



ETEK-SMARTFACTORY SOLUTION

Version: 1.6

Presented by: ETEK-SmartFactory Team

ETEK
TOTAL AUTOMATION SOLUTIONS

ABOUT US

ETEK AUTOMATION SOLUTIONS JOINT STOCK COMPANY is a member of **TAN PHAT ETEK cooperation** and has become a pioneer in providing **Total Automation Solutions** in Vietnam.

Name of company	ETEK AUTOMATION SOLUTIONS (ETEK)
Founded year	2006
CEO	Nguyen Trong Thuong (Mr)
President & Founder	Nguyen Quoc Dat (Mr)
Parent Company	Tân Phát ETEK



ETEK – GO GLOBAL

TAN PHAT ETEK ECOSYSTEM



ETEK HISTORY

Started with 6 members

Engaged in Industrial Automation solution business. Canon, Denso, Toyota are our first Japanese customers

Providing total automation solutions, being a strategic partner of many large firms, demonstrating the general contractor's ability in implementing a series of large-scale projects with high difficulty.

Business expansion



Factory Automation Solutions
Education Training Equipment



Life Automation Solutions
Factory Automation Solutions
Education Training Equipment



2022



Education Training Equipment



Continued to cooperate with major partners on packaging solutions and Vision

- Area: 250m2
- Employees : 48



- Area : 3000 m2
- Employees : 200+
- 2 Branches: Hà Nội, Tp Hồ Chí Minh

- Focusing on training activities, developing specialized applications for each industry

2006

2010

2012

2016

2017 - 2021



ABB has cooperated with ETEK since 2010 and now ETEK is authorized as a Provider Value by ABB.

PRODUCTS & SOLUTIONS

FAS – FACTORY AUTOMATION SOLUTIONS

1. Assembly
2. Packaging
3. Fabrication
4. Robotic Applications
5. Auxiliary Equipment
6. Smart Factory
7. Intralogistics



ETS – EDUCATION TRAINING EQUIPMENT

1. Training equipment for Universities, Colleges and Vocational schools
2. Automation Training



LAS – LIFE/UTILITY AUTOMATION SOLUTIONS

1. Automated Parking Solutions (Car, Motorbike)
2. EV Charger
3. Vending Machine
4. Lifting equipment



 Automotive & Components	 Plastic /Metal /Ceramic
 FMCG / Consumer /Chemical /Pharma /Medical	 Textile /Footwear
 3C Computer Communication, Consumer Electronics	 General Industries
 School	 Ecommerce
 Building	 Tourist area
 Home	 Hospital

- University, College
- Vocational school
- High school

PARTNERS

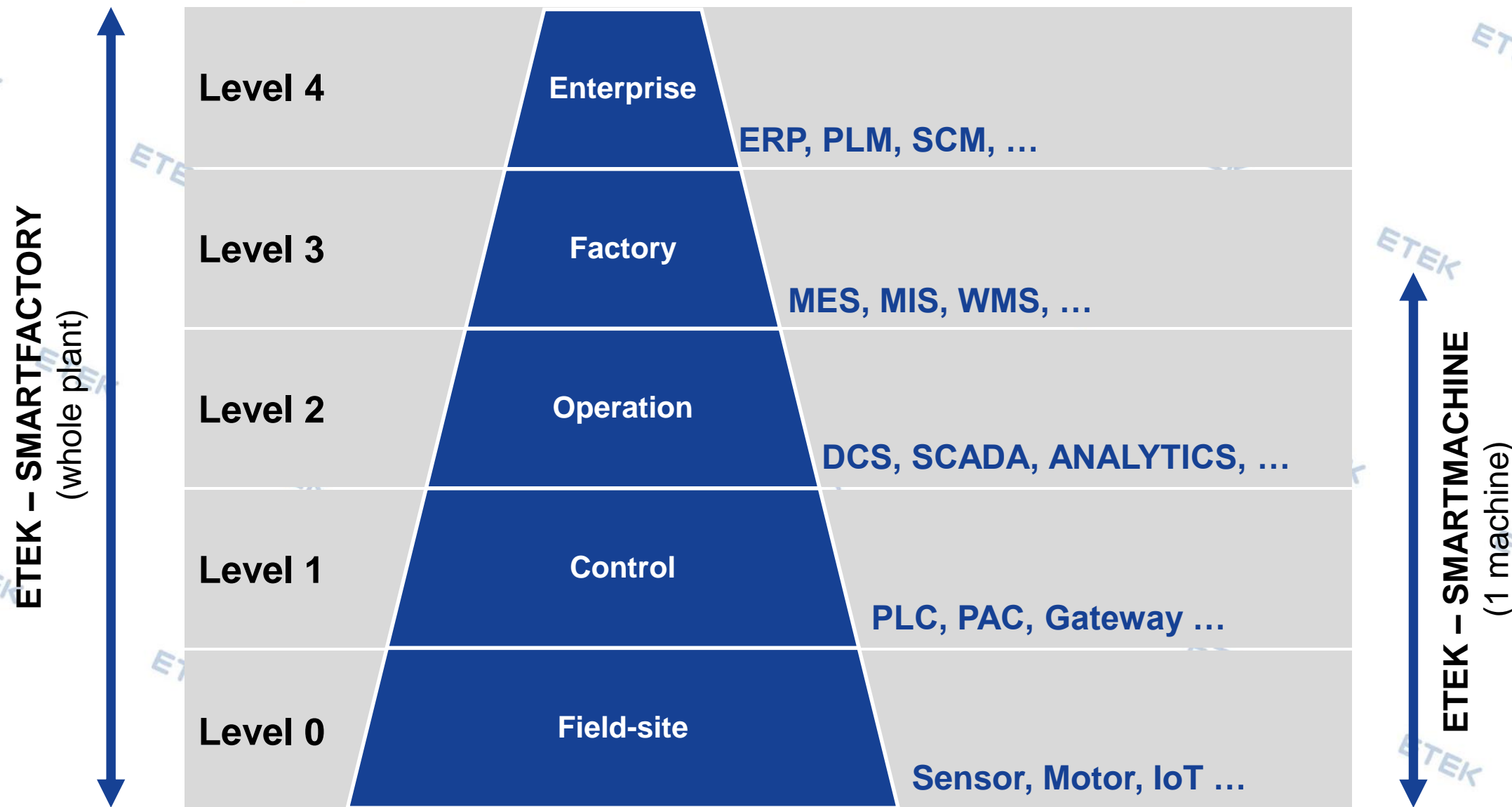


MỤC LỤC

1. Overview
2. ETEK-SmartMachine
3. ETEK-SmartFactory Solution Package
4. ETEK-SmartFactory Industrial Suite

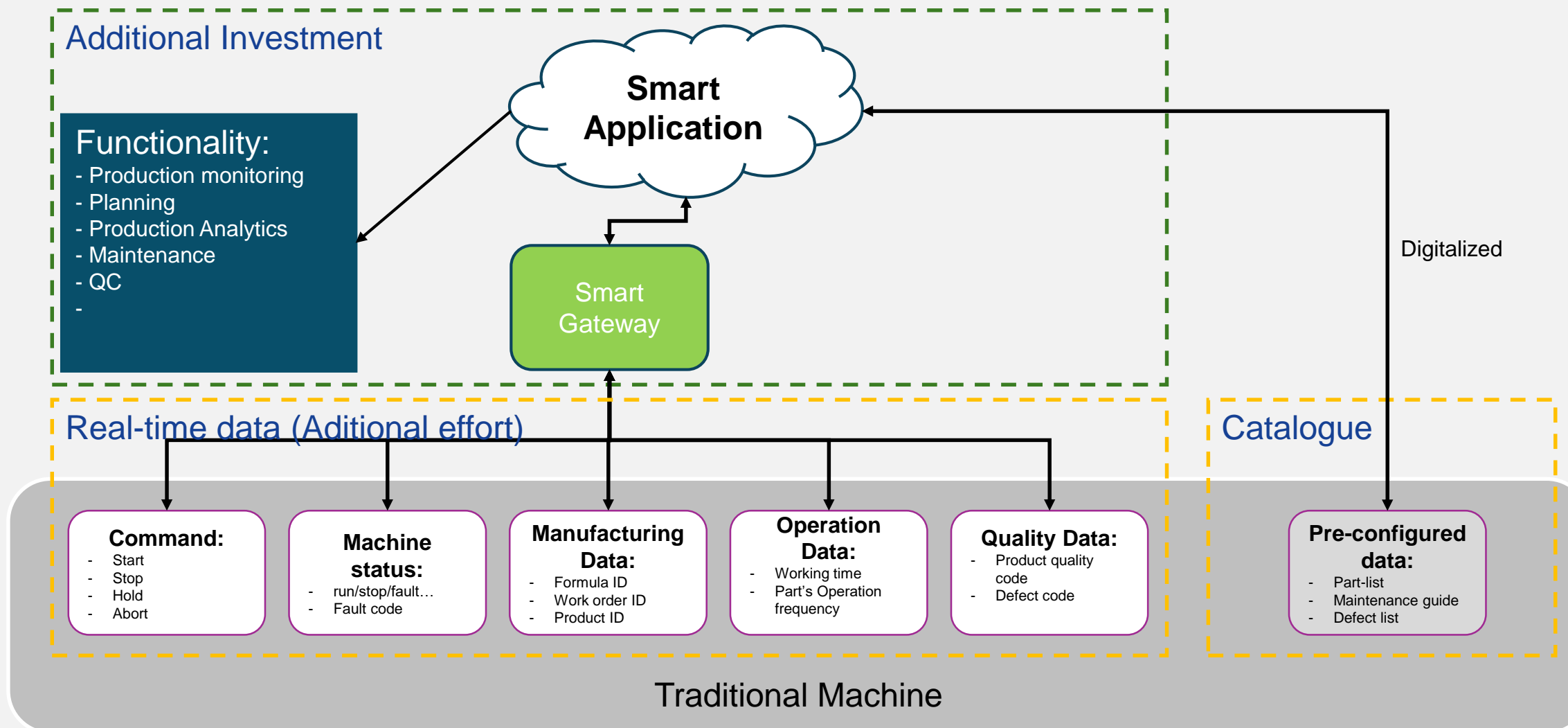


ETEK - SMARTFACTORY ARCHITECTURE



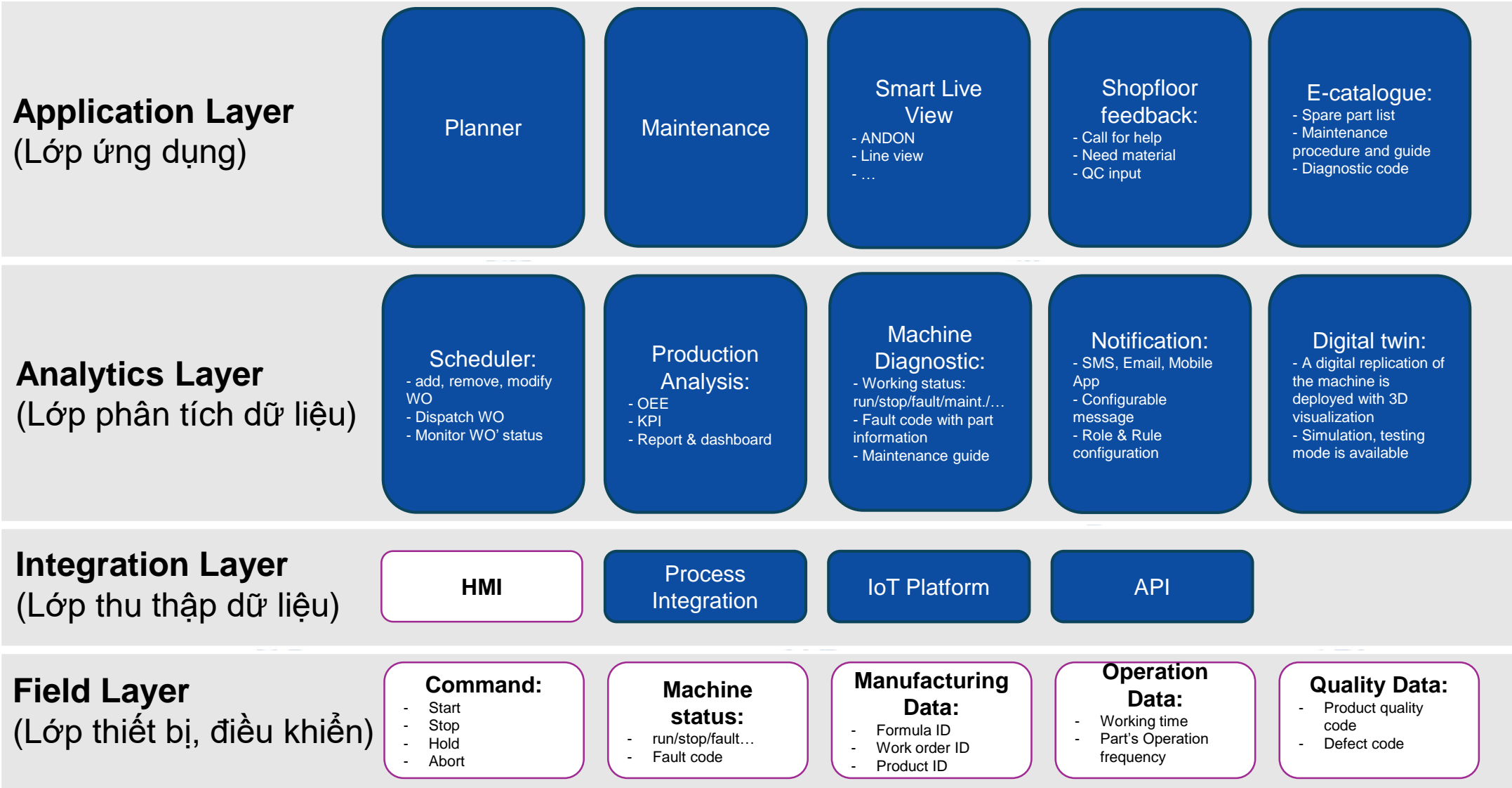
CONCEPT ETEK-SMARTMACHINE

“Smart Machine” Concept



ETEK-SMARTMACHINE FUNCTIONALITY

- ☒ Smart machine
☐ Traditional machine



ETEK'S PARTNERS

SIEMENS

RA Rockwell Automation

EPICOR

odoo

adstec
Industrial IT

hp

- MES
- MIS
- MMS
- WMS
- ...

Factory Level

- ERP
- PLM
- SCM
- ...

Enterprise Level

Operation Level

- DCS
- SCADA
- ANALYTICS
- ...

Control & Field-site Level

- Gateway
- Data connector
- Sensor
- IoT
- ...

SAP

EPICOR

SIEMENS

odoo

Google Cloud

Microsoft Azure

SIEMENS

RA Rockwell Automation

Schneider Electric

ADVANTECH

GlobalReader

Microsoft Azure

SIEMENS

RA Rockwell Automation

Schneider Electric

ADVANTECH

FERMAI

shuratech

WHY'S ETEK?

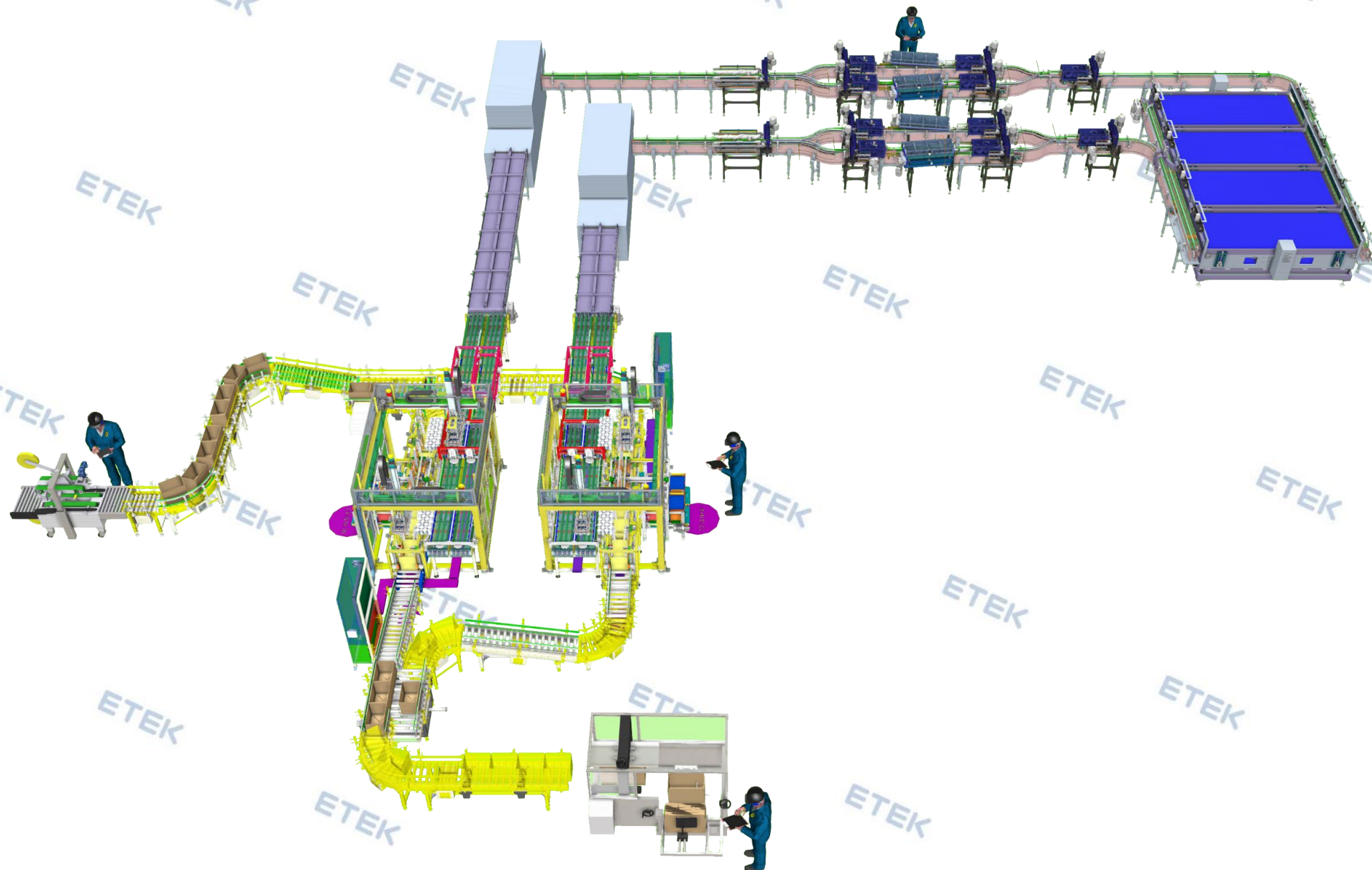




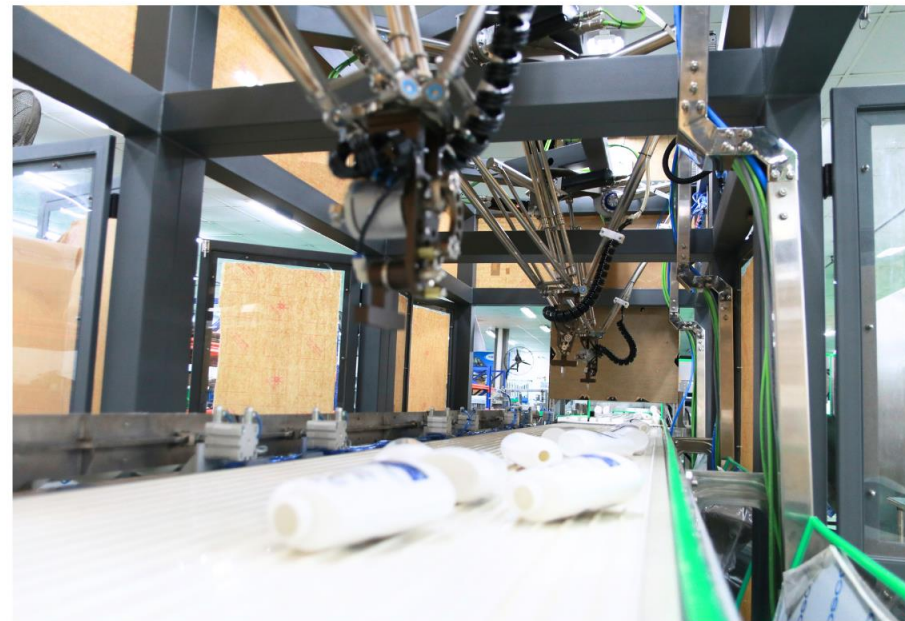
ETEK
TOTAL AUTOMATION SOLUTIONS

ETEK-SMARTMACHINES

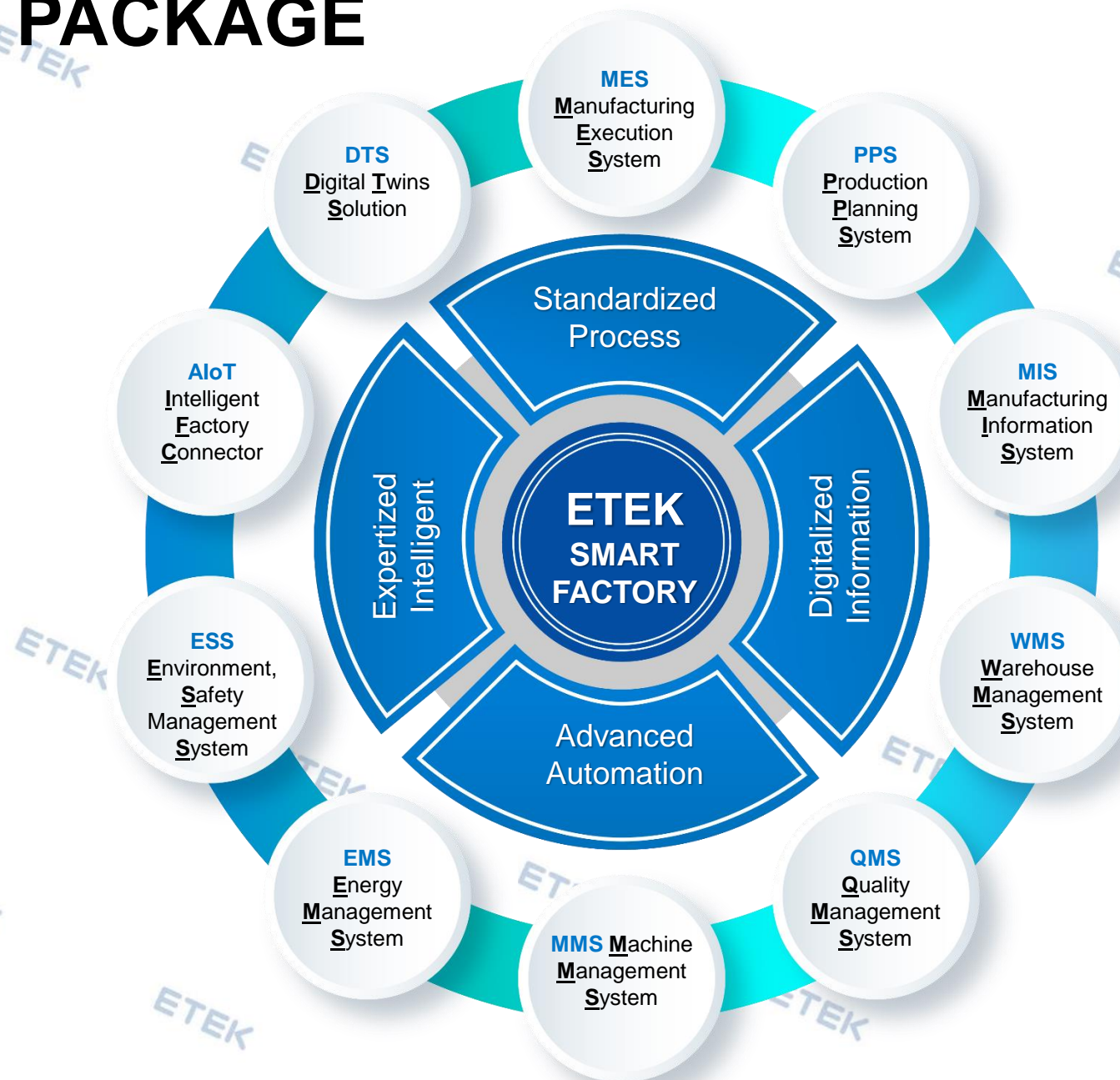
TYPICAL ETEK-SMARTMACHINE MODEL



SOLUTION PACKAGES



SOLUTION PACKAGE



Level 4

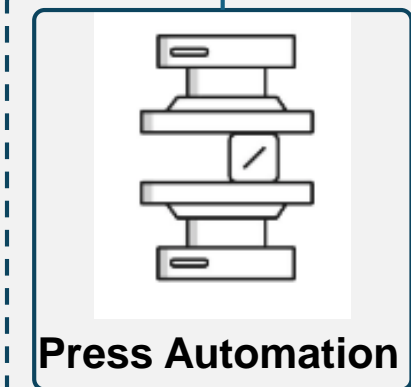
Level 3

Level 2

Level 0+1



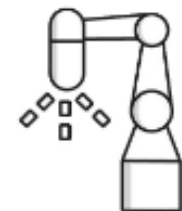
Raw material



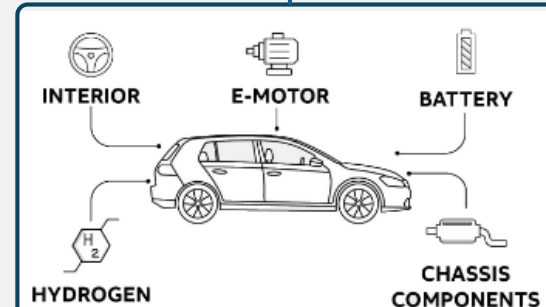
Press Automation



Body-in-white



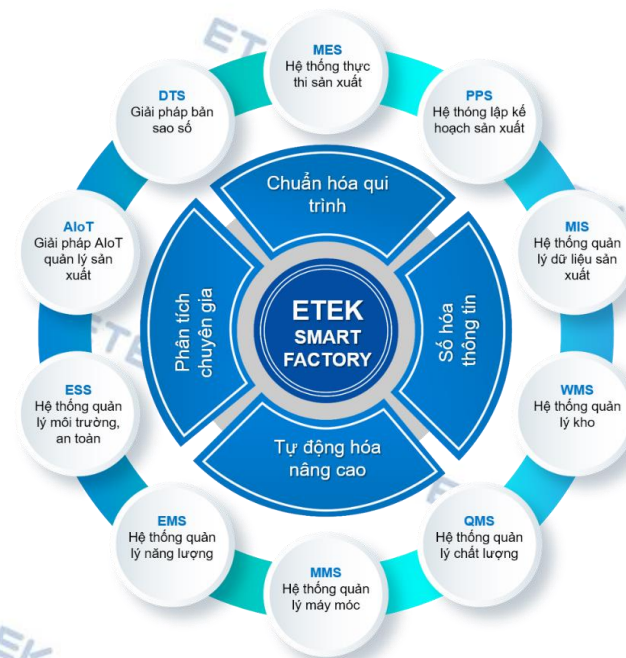
Paint



Final Assembly



Final car



MES - MANUFACTURING EXECUTION SYSTEM



MES/MoM overview

- MES is a core solution that help to operate factory in total. The production will be handled from input to output with co-operation of all productions team in real-time



Functionalities

- Production model management (Machine, manual labor, production layout)
- Production method management (BoM, Recipe)
- Material management
- Work-order management
- Quality control (IQC, OQC, PQC, FQC, SQC)
- Production visualization with real-time data
- Report & dashboard



Partners & Industry

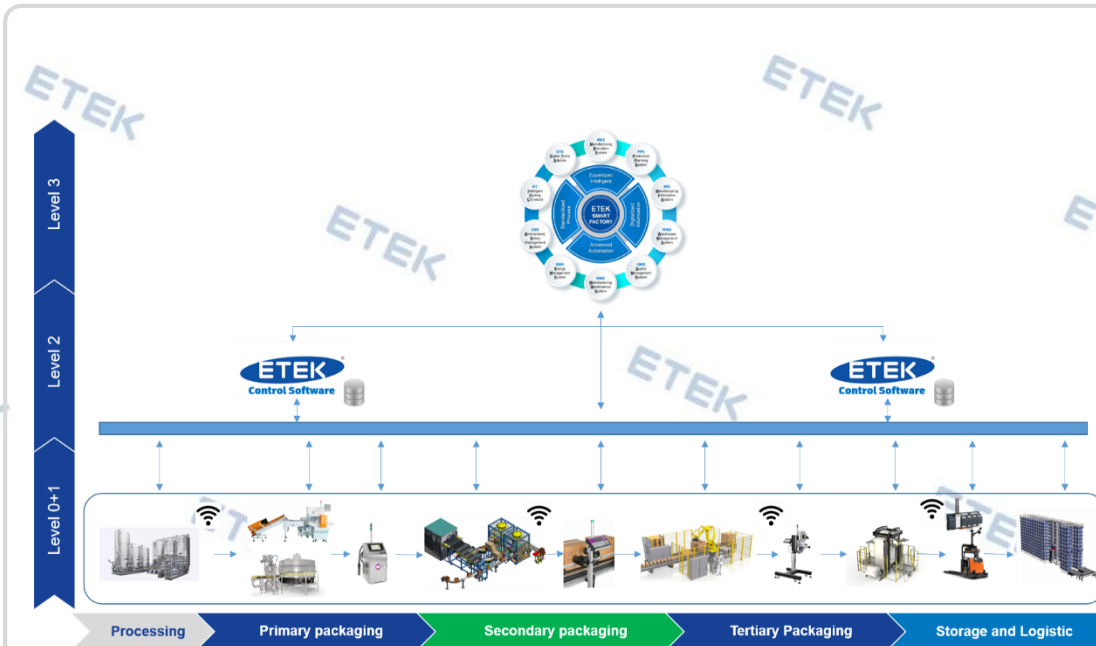


- All industries



System Components

- Core MES software module
- IT infrastructure
- Manufacturing control system integration platform
- Peripheral devices
- API or specific interface



MIS – MANUFACTURING INFORMATION SYSTEM



MIS overview

- The solution provide managers of factory all the necessary information of production in real-time



Functionalities

- Production model management
- Data integration with production system or shop-floor
- Data analytics model implementation: OEE, KPI calculation
- Production real-time visualization
- Reports & dashboard



Partners & Industry

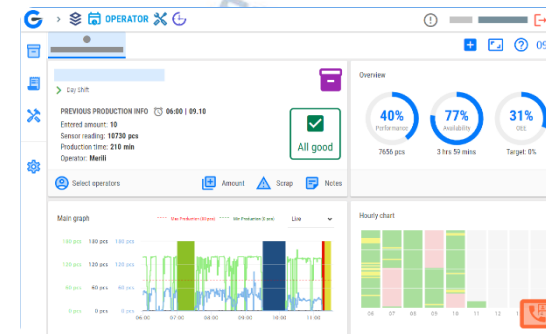
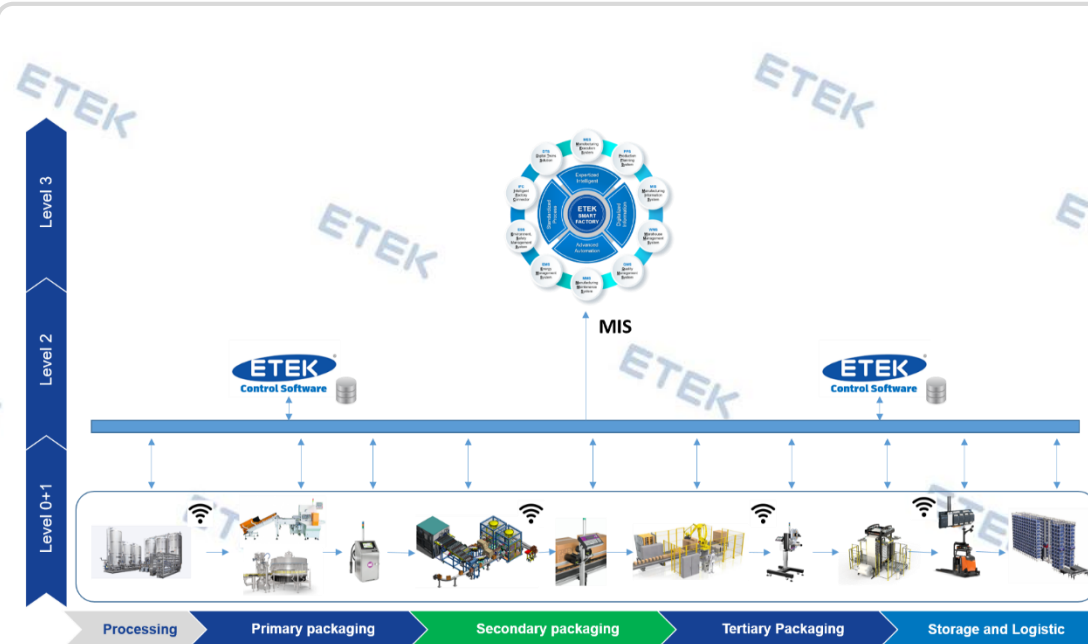


- All industries



System Components

- MIS software module
- IT and connectivity infrastructure
- Data acquisition and analytics software
- Predictive equipment
- Manufacturing control system integration platform
- Peripheral devices
- API or specific interface



MMS – MACHINE MANAGEMENT SYSTEM



MMS/EAM overview

- The system provide the capability to handle the maintenance and assets management with best performance

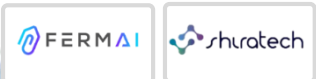


Functionalities

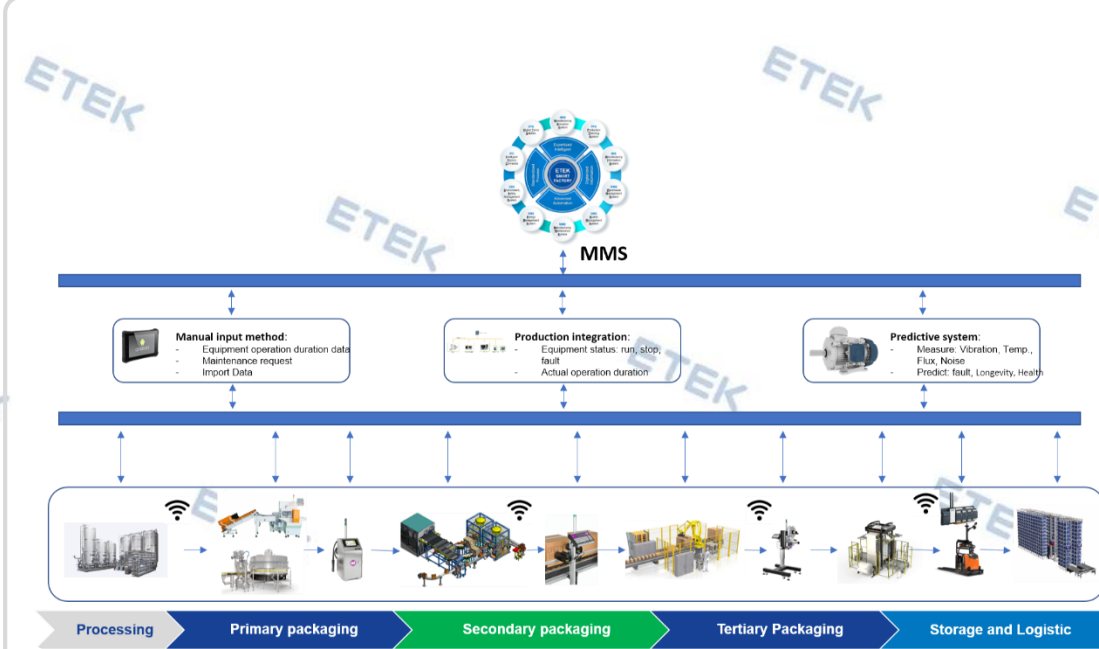
- Plan/job management
- Maintenance procedures management
- Equipment/Assets' maintenance profile management
- Maintenance teams management
- Execute the advance maintenance strategy



Partners & Industry



- Heavy industries: steel, cement, mining,...
- 3C
- FMCG
- Oil & Gas
- Pulp & Paper, Textile
- Automotive



System Components

- MMS software module
- IT and connectivity infrastructure
- Data acquisition and analytics software
- Predictive equipment
- Manufacturing control system integration platform
- Peripheral devices
- API or specific interface



WMS – WAREHOUSE MANAGEMENT SYSTEM



WMS overview

- The system provide the capability to handle the all the storage process of the materials and all the operation activities in the warehouse.



Functionalities

- Place/location management with 2D/3D visualization
- Material/product management
- Transport means/equipment management with fully control ability
- Work order/plan management with automatic logic
- User management
- Reporting



Partners & Industry

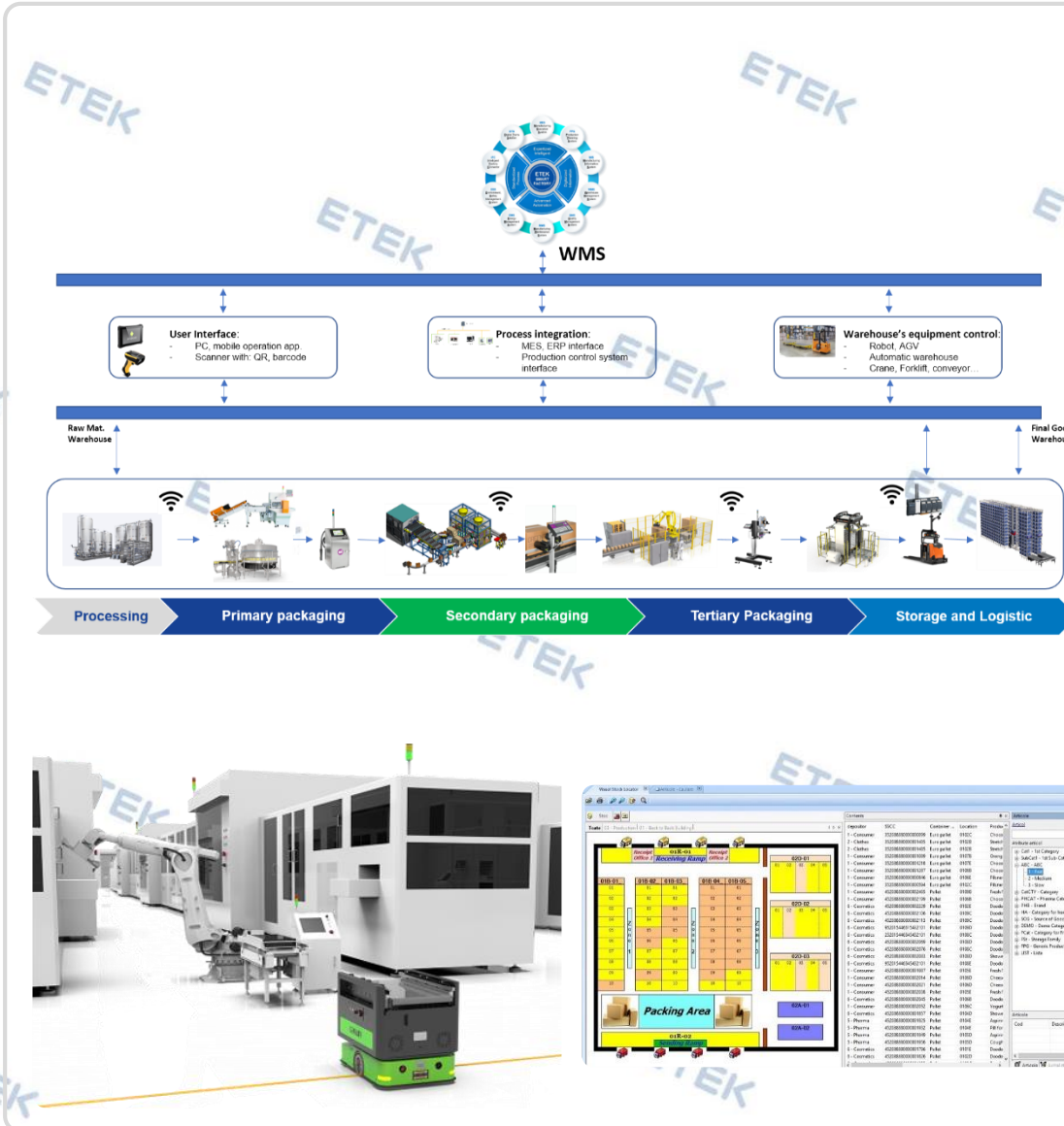


- 3C
- FMCG
- Food & Beverage
- Pharma & Life science
- Steel



System Components

- Warehouse management software module
- Specific Operation software for Vehicle
- IT and connectivity infrastructure
- Automatic warehouse module
- Transport means/ equipment integration platform
- Peripheral devices
- API or specific interface



QMS – QUALITY MANAGEMENT SYSTEM



QMS overview

- The system help factory to manage the whole process from QP → QA → QC → QI to ensure quality standards and compliance regulations, such as: ISO 9001 or TQM



Functionalities

- Quality management process: QP → QA → QC → QI
- Test/sample management
- QM team management
- Product quality profile management
- Integrate production system & automation QC machine: robot, vision system, ..
- Reatime quality mornitoring and analyzing with 7 QC tools
- Report



Partners & Industry

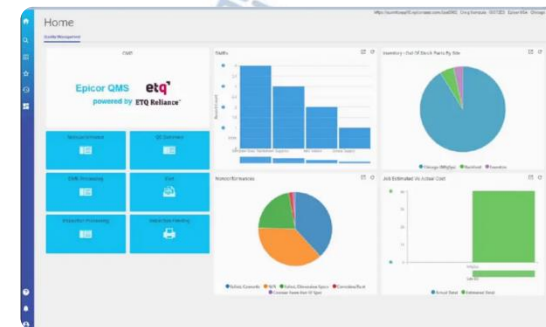
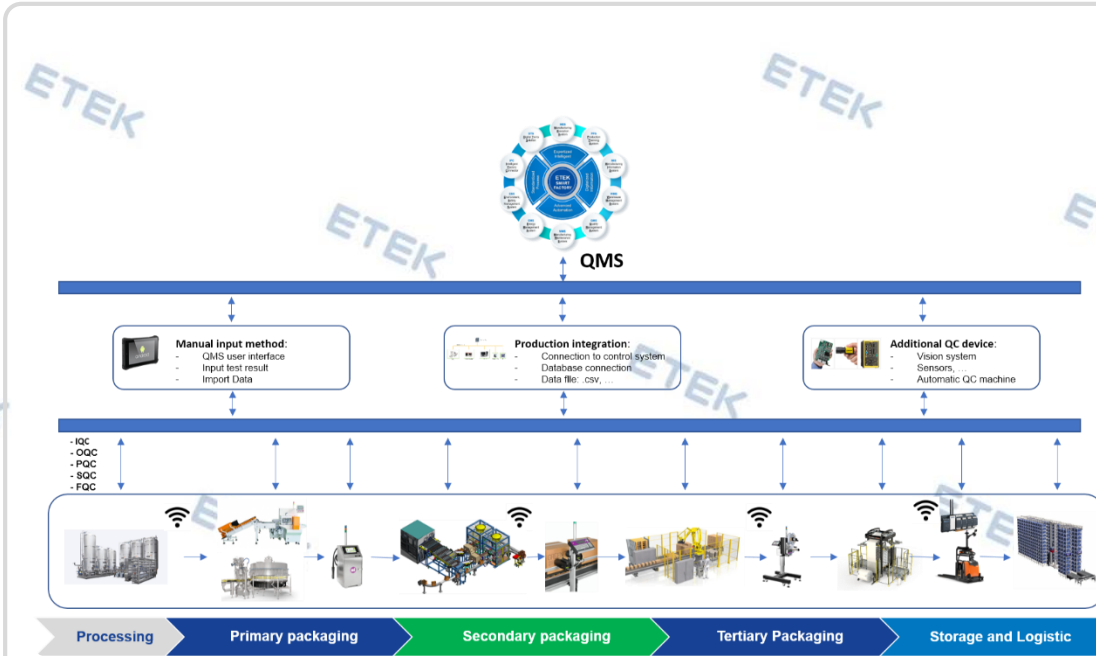


- Food & Beverage
- Pharma & Life science
- Cement
- 3C
- Steel



System Components

- QM software module
- IT and connectivity infrastructure
- Data acquisition and analytics software
- Manufacturing control system integration platform
- Automatic QC equipment
- Peripheral devices
- API or specific interface



EMS - ENERGY MANAGEMENT SYSTEM



EMS overview

- The system provides an overview of energy sources in the factory, help factory to improve the effectiveness of energy consuming and ensure the Regulatory Compliance



Functionalities

- Energy flow visualization
- Consumption monitoring
- Analyzing according to ISO 500001
- Optimization strategy with PDCA
- Energy saving rate, waste energy, KPI
- Energy baselines and energy efficiency indicators
- Abnormal detect & alarm
- Reports & dashboard



Partners & Industry

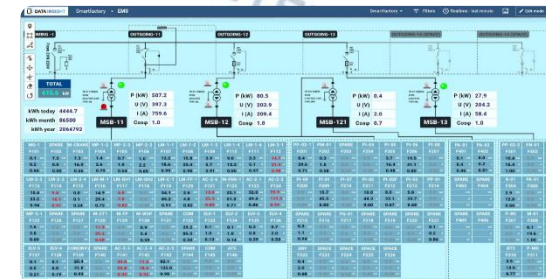
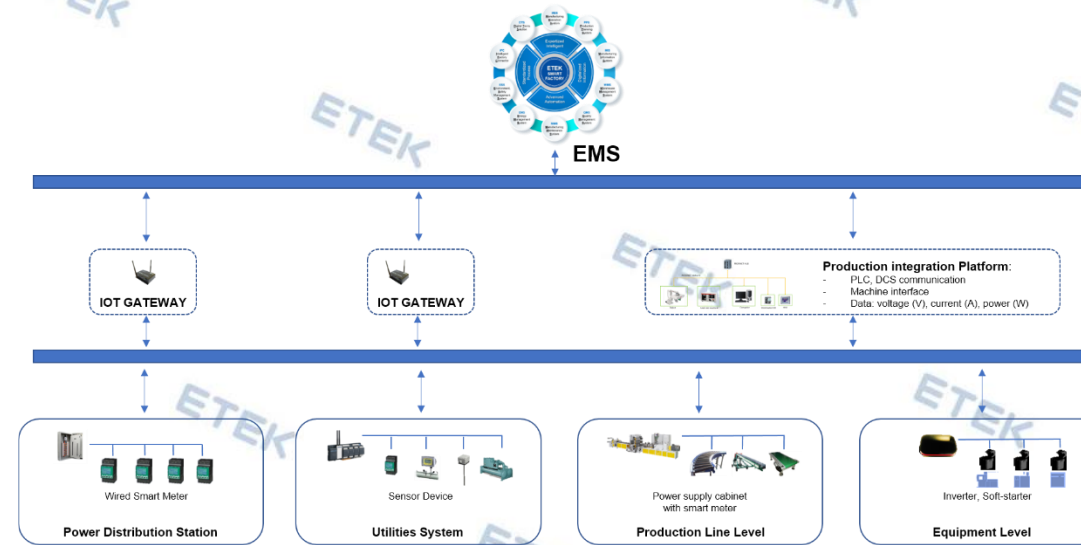


- Cement
- Steel
- Pulp & Paper
- Chemicals
- Net-Zero Concerned Industry



System Components

- EMS software module
- IT and connectivity infrastructure
- Data acquisition and edge analytics software and devices
- Control system integration platform
- Smart Measurement devices: gas, liquid, power meter, ...
- API or specific interface



ESS - ENVIRONMENT, SAFETY SYSTEM



ESS overview

- In industrial environment, safety and Environment commitment is compulsory
- With large production, there are more critical standards need to be followed



Functionalities

- Data real-time monitoring from Data logger and CCTV
- CCTV with AI based monitoring
- Remote control or automatic sampling process
- Interaction between users with mobile app
- Abnormal detect & alarm
- Reports & dashboard



Partners & Industry

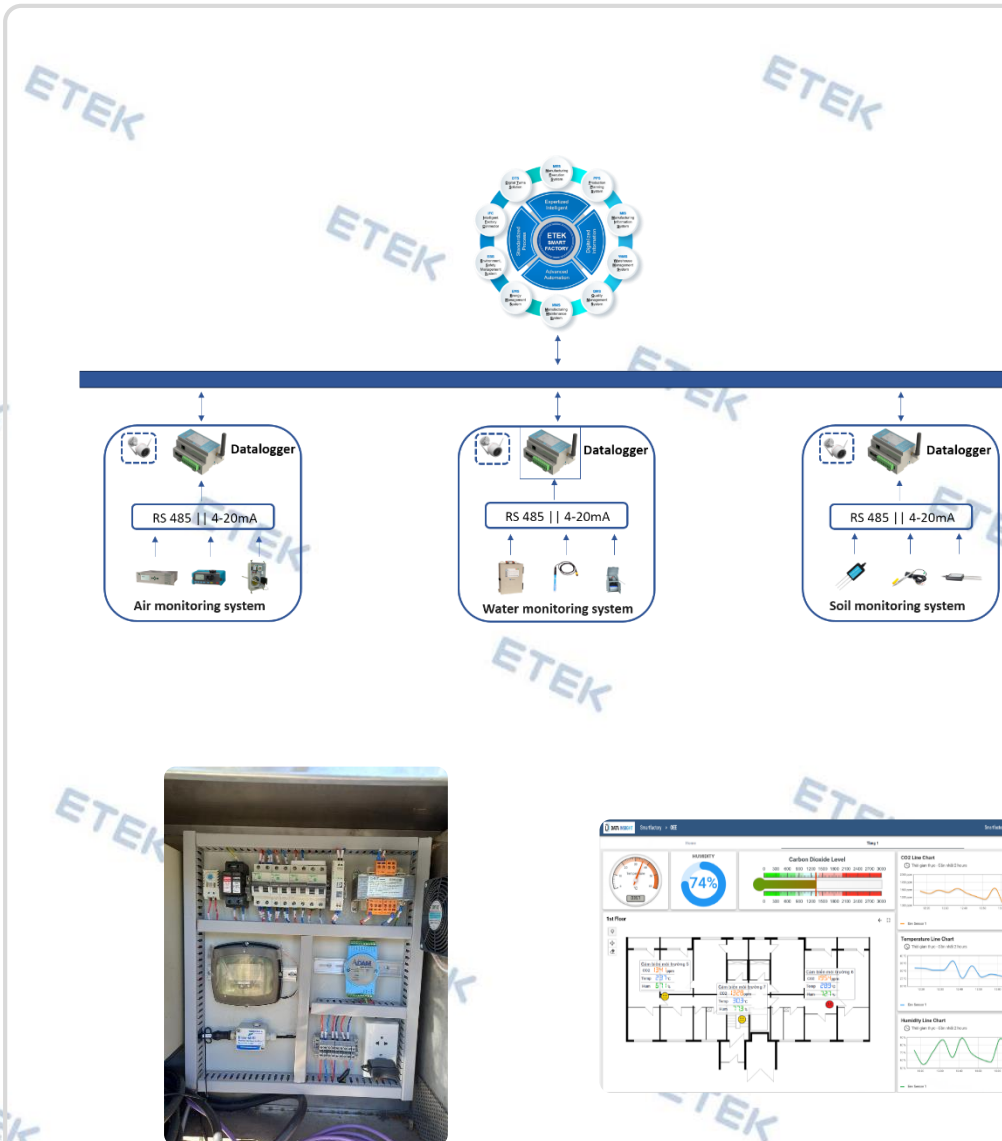


- Various Industry



System Components

1. ESS software module
2. IT and connectivity infrastructure
3. Edge device for data pre-processing and control
4. Smart station with sensor and actuator: gas, liquid, solid emission, ...
5. CCTV with smart supervising for safety
6. Other type of safety supervising technology



IFC – INTELLIGENT FACTORY CONNECTOR



iFC overview

- The solution provide the strong capability of bi-directional integration between production systems, shop-floor and factory management level or higher



Functionalities

- Bi-directional integration with production system or shop-floor
- Communication with 3rd management application
- Raw data processing algorithm



Partners & Industry

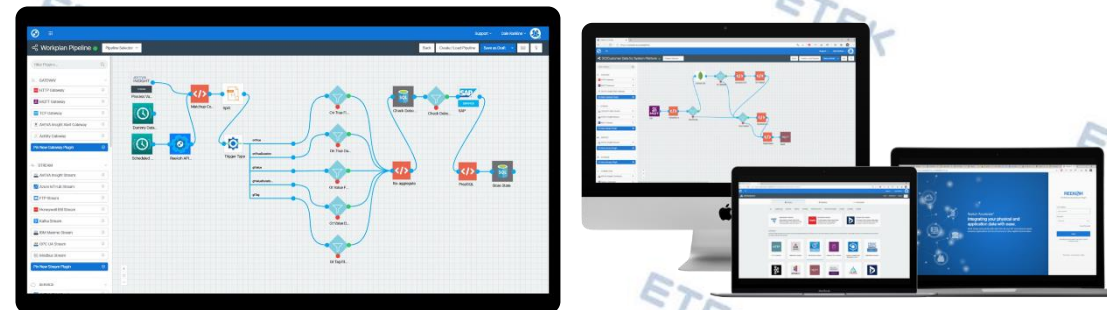
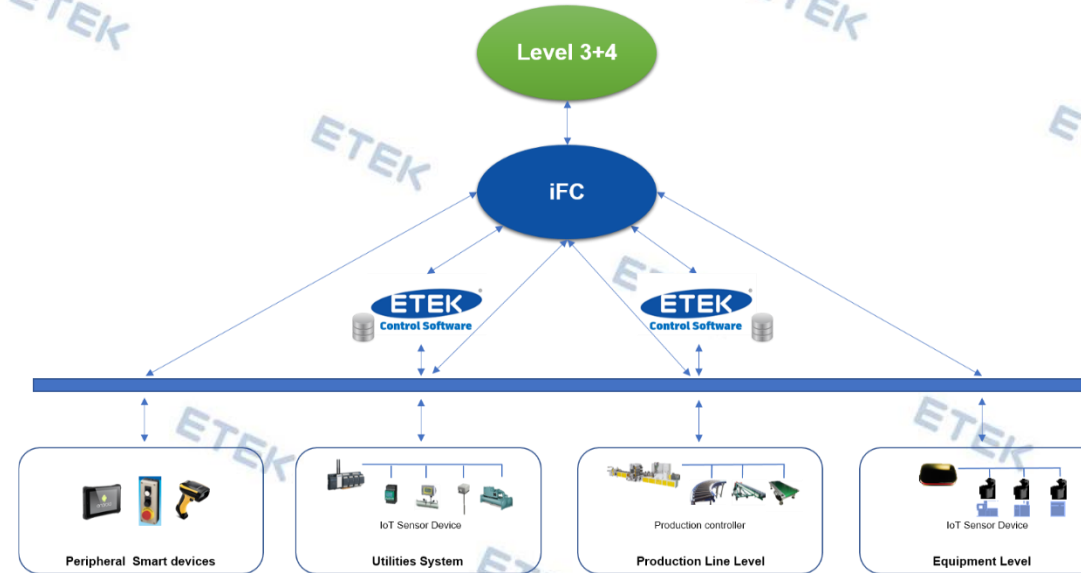


- Various industry



System Components

- iFC software platform
- IT and connectivity infrastructure
- Manufacturing control system integration platform
- Peripheral devices
- API or specific interface



AIOT – AIOT APPLICATION FOR FACTORY



AIoT overview

- The AIoT solution help factory to strengthen machine - machine - human connection to get optimal performance and a deeper view to the manufacturing system through data



Typical application

- Predictive maintenance
- OEE calculation
- ANDON application
- SHOPFLOOR FEEDBACK
- Electronic Manual
- AI based Quality analyzing
- AI based Monitoring in energy, safety, environment management
- ...



Partners & Industry

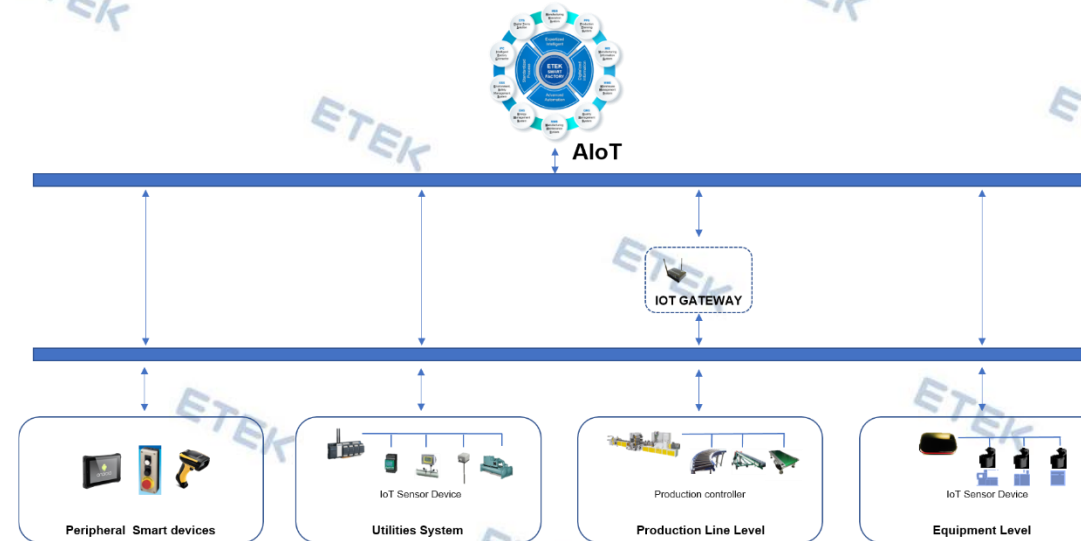


- Various industry



System Components

1. Data acquisition and analytics software
2. IT and connectivity infrastructure
3. IoT device
4. Peripheral devices
5. API or specific interface



DTS – DIGITAL TWINS SOLUTION



DTS overview

- A solution which provide virtual model of real system that can work in parallel with the same parameter and condition. Thus, factory can get many benefits



Functionalities & benefits

- Visualization of machines and processes to assist in designing and presenting or training.
- Virtual commission of machines and processes in different scenarios in order to evaluate and detect errors in operation
- A shared platform for parallel workflow between design teams (mechanical, electrical, automation, ...)

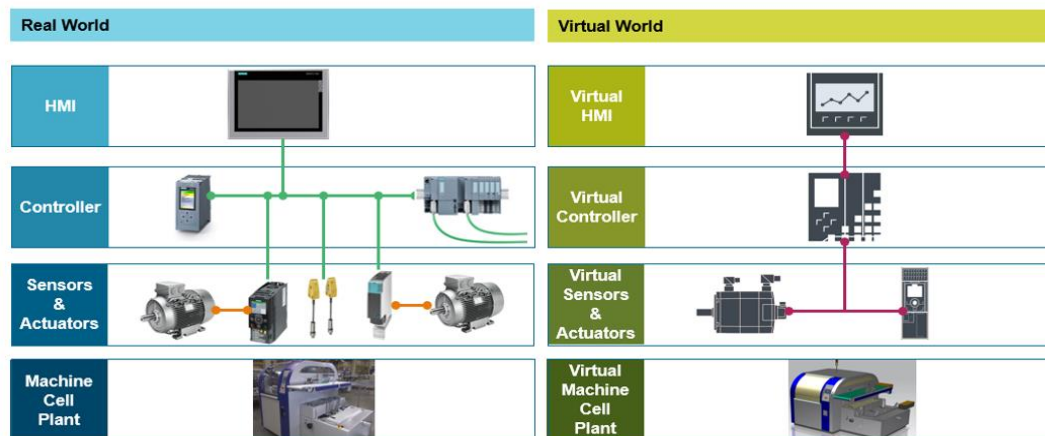


Partners & Industry

SIEMENS

RA Rockwell Automation

- Heavy industries: steel, cement, mining, marine...
- 3C
- Petroleum, Oil & Gas
- Automotive
- Machine & Line builder

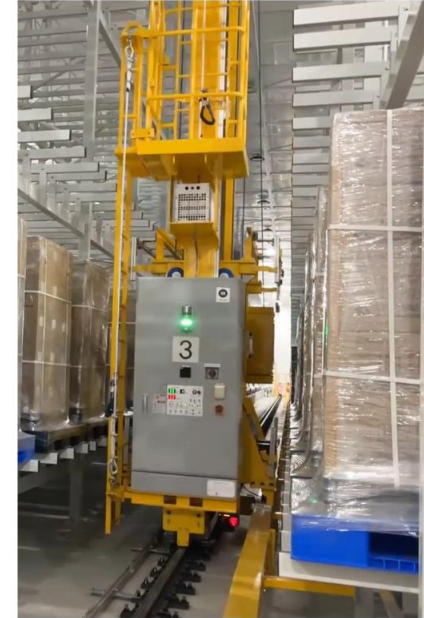


System Components

- Modelling, designing software,
- Simulation software for each level (factory, processes, machines)
- Integration platform
- Peripheral devices or sensors
- API or specific interface



INDUSTRIAL SUITES



INDUSTRY TARGET

FOOD & BEVERAGE



- Staple foods
- Snacks,
- Beer
- Fruit drinks/juices

CONSUMER GOODS



- Consumer electronics
- Personal care
- Healthcare products
- Agricultural products

FOOTWEAR & TEXTILE



- Apparel Manufacturing
- Fashion Industry
- Fabric
- Yarn

HEAVY INDUSTRY



- Chemical
- Cement
- Steels
- Mining

PCB



- Resistors
- Capacitors
- Inductors
- Diodes

AUTOMOTIVE & EV



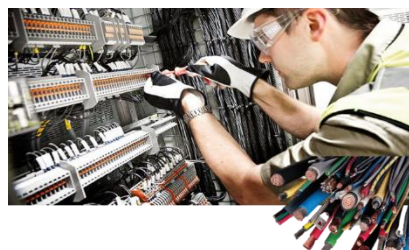
- Electric vehicles
- Hybrid electric vehicles
- Plug-in hybrid electric vehicles

PULP & PAPER



- Paperboard
- Writing paper
- Paper towels
- Art paper

ELECTRICAL MACHINERY



- Electrical circuit
- Printed circuit board
- Circuit board

METAL PROCESSING



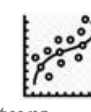
- Metal working
- Metal machining
- Metal casting
- Metal fabrication

MEDICAL & PHARMACY



- Antibiotics
- Antidepressants
- Vaccines
- Biologics

Factory Situation Room

Instant
MonitoringTracking &
AnalysisFuture
Prediction

Total available time (calendar day)

Planned operating time

Scheduled break

Actual operating time

Change

Malfunction

Net run time

Idle

P. Loss

Productive time

Rework

Q. Loss

A: Machine Availability



Monitoring: Real-time machine failure condition
Tracking: Tracking long-term efficiency
Prevention: Remarks for special SKU for advance warnings

P: Manufacturing Performance



Monitoring: Real-time alarms for production errors
Tracking: P&Q tracing for special SKU
Prevention: Advance warnings for special low-power SKU

Q: Product Quality

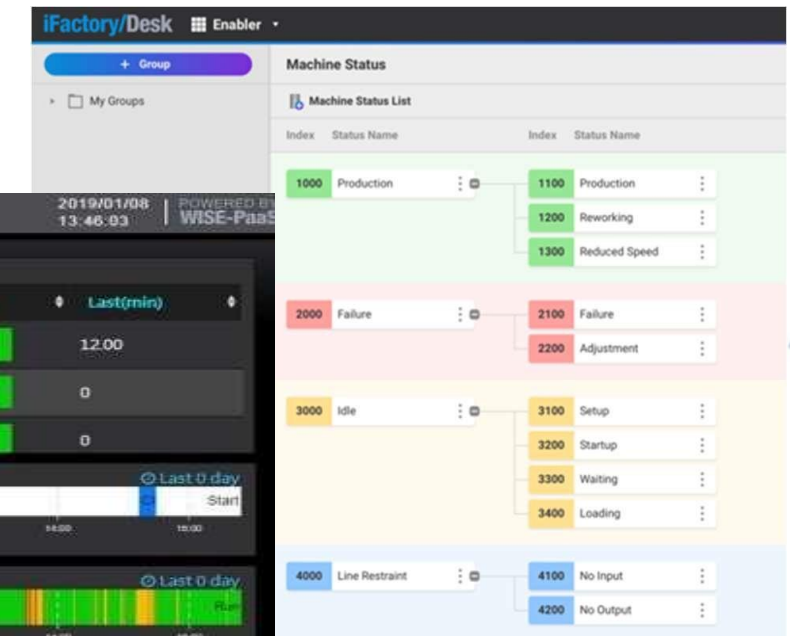


Monitoring: Real-time notifications by telephone
Tracking: Pareto charts for error frequency
Prevention: Focus resources on critical errors

Visualize Machine and Production Line

Flexible setup with grouping and code mapping features to enable detailed visualization and analysis of machine performance.

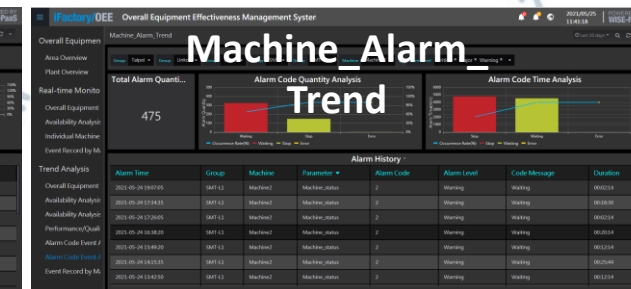
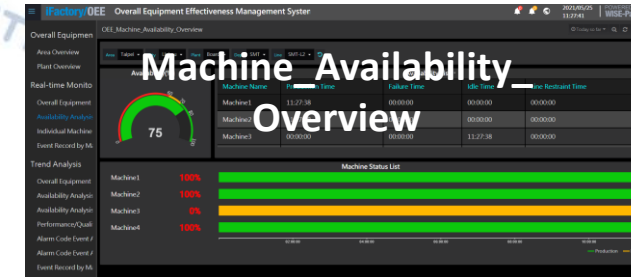
Performance in Real Time



■ Production
■ Failure
■ Idle
■ Line Restraint

Abnormal conditions

DASHBOARD OEE



*Thank
you*

ETEK AUTOMATION SOLUTIONS JSC

Headquater

189 Phan Trong Tue Road, Thanh Liet Ward, Thanh Tri Dist, Hanoi, Vietnam

Ho Chi Minh Branch

No 1 Le Duc Tho Road, Tan Thoi Hiep Ward, 12 District, Ho Chi Minh, Vietnam

info@etek.com.vn

www.etek.com.vn