## **SMARTBASE Product introduction**

RER MER NOZ.F





## Agenda

- **1. Solution Overview**
- 2. Solution Features
- 3. Solution Configuration Chart
- 4. SMART BASE Menu Configuration Chart
- 5. Key business processes
- 6. System Configuration Chart
- 7. expectation effectiveness
- 8. Project Implementation Plan

### **1. Solution Overview**

#### SMART BASE Solution Overview

- Reflecting the business environment and requirements of the automobile and manufacturing industries
- Solutions optimized for different types of manufacturers
- Solutions that faithfully reflect the quality certification review requirements such as SQ)

- Optimization of MES Operational Process (Implementation of Functional Integration)
- Waste Factors and Foam Removal in Construction
   Methodology through IB Development Methodology
- Eliminating risk factors through short-term preparation and training

#### **Manufacturing Optimized Solutions**

How to build a step-by-step solution

- Step-by-step system deployment based on customer needs
- Complete the integrated system implementation after using the system construction by module
- Different solution deployment methods (Cloud / On-Premise)

Reduce the cost and time of the deployment process

Reliable post operational support

- Continuous management of IT technology development and reflection of solution improvement
- Free upgrade of solutions based on technological advancement
- Continuous follow-up management so that it can be established in the customer's work environment

**SMART BASE** 

#### www.innobase.net

### 2. Solution Features

#### Manufacturing Optimized Solutions

To improve the process and maintain the accuracy of decision-making information, process optimization and system functionality are integrated through proactive and thorough analysis.



Utilizing production transmission (RAW) data / Building MES using Bar Code



#### Management of facility production (Raw Data)

- Gathering real-time information to support data analysis for facilities such as HMI/PLC/RS232c.
- It supports statistics/analysis by item as a management standard through the use of facility data.
- Increase efficiency of management by providing information on facility conditions through facility I/F
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Utilizing production transmission (RAW) data / Building MES using Bar Code



#### Material Management/Production Management with Bar Code

- Raw material input management and work instruction management using bar code
- Work allocation and distribution management by calculating BOM requirements
- Management of workers and working hours, performance management by worker/process
- Systematic bar code management for raw materials/outdoor processed products/finished products
- Work order and performance management for order performance / On-site performance management through TABLET

#### LOT History and LOT Tracking Management

- Provide LOT No according to work instructions, divide/integrate LOT, and support first-in-first-out management to inquire/search LOT history information
- Secure LOT traceability by linking process data/inspection data and managing BOM according to work instruction number/LOT No

#### Solution Deployment Roadmap

In addition to building the entire initial system in consideration of the customer's business environment, the proposal proposes to implement a stable information system through step-by-step system construction.

• ERP/MES Step-by-Step Construction Plan



• Goals for every step of information deployment

Step 1	Building a manufacturing sector-focused information infrastructure
	<ul> <li>WMS Construction (Barcode, Tablet PC, Location Management, Product, Material, Warehouse Management)</li> <li>Production history management (material lot tracking by product, process inspection information, Rework history)</li> <li>Establishment of site-oriented ERP/MES system (sales, BOM, production, quality, purchase, facility, mold, personnel, accounting, cost)</li> </ul>
Step 2	Establishment and advancement of related sector systems (A/S, import and export)
Step 3	Building SCM based on secured information systems



#### SMART BASE To-Be CONCEPT

#### **Facility Interfaceprerequisite**

- Quick identification of production information with HMI / PLC information interface and reduction of lead time (Efficiency of Performance Aggregation) - Pre-determined requirements : Defined in the design stage of "Production Facility Interface Pre-determined requirements"
- Improve operation method by introducing barcode system to performance registration work compared to production plan (minimize manual work)

### 4. System Construction Plan

SMARTBASE Solution Configuration Chart



### 4. System Construction Plan



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ibMES Details (1/2)

Solution	Function	Feature Overview	note
Management information	Operational status by sector	<ul> <li>Real-time aggregation/inquiry of major operational status (production, purchase, inventory, sales, quality, etc.)</li> </ul>	
BOM	<ul><li>Part Master Management</li><li>BOM Management</li></ul>	<ul> <li>Standardization and integrated management of product numbers and related information across the enterprise</li> <li>Integrated management of BOM configuration information</li> </ul>	
	Design Change Management	Design Change Information Management	
Business management	Order management	Management of order performance and delivery plan	
	Sales management	Sales performance management	Option
	Production plan management	Daily production plan management	
Production management	<ul> <li>Operation instruction management</li> <li>Production performance management</li> <li>Lot tracking management</li> <li>Managing Production Routing</li> </ul>	<ul> <li>Management of production performance and production progress (establishment of on-site production operation system)</li> <li>Production history management by production lot</li> <li>Automatic process rework aggregation</li> <li>Material Lot tracking management</li> </ul>	
	Productivity management	<ul><li>Standard working time management</li><li>Operational rate aggregation/analysis</li></ul>	

ibMES Details (2/2)

Solution	Function	Feature Overview	note
Purchase Management	Order management	<ul> <li>Order details management</li> <li>Payment plan management (cooperation management with partner)</li> </ul>	
Management	Purchase management	Management of purchase performance	Option
Product management	<ul><li>Warehousing management</li><li>Forwarding management</li><li>Inventory management</li></ul>	<ul> <li>Real-time warehousing management using barcodes</li> <li>Real-time factory management using barcodes</li> <li>Automatic real-time aggregation of product inventory status</li> </ul>	
Material management	<ul><li>Warehousing management</li><li>Forwarding management</li><li>Inventory management</li></ul>	<ul> <li>Real-time warehousing management using barcodes</li> <li>MRP-based real-time material dispensing</li> <li>Automatic real-time aggregation of material inventory status</li> <li>Management of daily payment completion</li> </ul>	

QMS Details (Optional)

	Solution	Function	Feature Overview				
	Quality control	<ul> <li>Quality Data Management</li> </ul>	<ul> <li>D/B of quality data and history management</li> <li>Automatically generate quality analysis data</li> <li>Quality inspection instrument (or inspection equipment) and computer system interface (automatic input/decision)</li> </ul>				
<ul> <li>In in</li> <li>In pi</li> <li>in</li> <li>SI</li> <li>Cl</li> <li>Q</li> <li>M</li> <li>Q</li> <li>In</li> </ul>	Inspection criteria information management	<ul> <li>On-site inspection progress management</li> </ul>	<ul> <li>Real-time monitoring of quality inspection progress</li> <li>Real-time Alarm function in case of missing/failed inspection</li> <li>Improvement of on-site quality inspection work efficiency</li> </ul>				
	import inspection Shipment inspection	<ul> <li>Inspection Standard Management</li> </ul>	<ul> <li>Establishment of inspection standards D/B and management of change history</li> <li>Computerized inspection standards to check the site</li> </ul>				
	Shipment inspection Claim Management Change Management Quality improvement management Quality Analysis Instrument Management	<ul> <li>quality improvement</li> </ul>	<ul> <li>Real-time sharing of quality information and establishment of collaboration system through system</li> <li>Minimize quality risk and failure costs through efficient quality improvement</li> </ul>				
		Responding to customer needs	<ul> <li>Meeting customer requirements</li> <li>Effectively respond to customer evaluation, such as SQ certification</li> </ul>				

Initial, Intermediate, and Final Product Inspection(optional)

Solution	Function	Feature Overview	note
management of primary and secondary products	<ul> <li>Standard information management</li> </ul>	<ul> <li>Management of information on the inspection criteria for super- high and medium-sized products (inspection specifications, number of samples, etc.)</li> <li>Managing the inspection cycle</li> <li>Managing Inspector Information</li> </ul>	
	<ul> <li>Inspection Standard Management</li> </ul>	<ul><li>Inspection Standard File Up/Download</li><li>Inspection Standard Online Inquiry (site/office)</li></ul>	
<ul> <li>Inspection criteria information</li> </ul>	Initial, Intermediate, and Final Product Inspection	<ul> <li>Automatically input the quality measurement value by interfacing with the measurement equipment</li> <li>OK/NG automatic determination</li> </ul>	
<ul><li>management</li><li>Inspection plan management</li><li>Management of</li></ul>	<ul><li>Initial, Intermediate, and Final Product Inspection</li><li>Monitoring</li></ul>	<ul> <li>Establishment of inspection results database</li> <li>Real-time monitoring of inspection status</li> <li>Alarm system (missing inspection, defective)</li> </ul>	
<ul> <li>Monitoring inspection status</li> <li>Quality Analysis</li> </ul>	• SPC	<ul> <li>Management of key quality control indicators</li> <li>Automatically generate various analysis data (graphs, charts, etc.)</li> </ul>	

FOOL PROOF Details (Optional)

Solution	Function	Feature Overview	note
FOOL PROOF	<ul> <li>Processing real-time information of process condition data</li> </ul>	<ul> <li>Real-time abnormality determination and alarm occurrence</li> <li>Real-time monitoring of field conditions</li> <li>Create a fast, flexible response system</li> <li>Improvement of the concentration of leakage of defective products in the production process</li> </ul>	
<ul> <li>Process condition standard information management</li> <li>Process condition management</li> </ul>	<ul> <li>Automatic storage/aggregation/ analysis of process condition data</li> </ul>	<ul> <li>Improve data reliability</li> <li>Tracking/analysis of historical data</li> <li>Secure PL legal responsiveness by securing supporting data to respond to field claims</li> <li>Eliminate manual data management to reduce administrative costs</li> </ul>	
<ul> <li>Process condition monitoring</li> <li>Process condition analysis</li> <li>Mobile Program</li> </ul>	• Automatic control of facilities in the event of repeated failures	<ul> <li>Risk Blocking of Large Field Claim Occurrence by Mass Production of Defective Products</li> <li>Reduction of rework and modification work due to the occurrence of defective products</li> </ul>	
Facility Interface	<ul> <li>Building a Big Data Analysis System</li> </ul>	<ul><li>Optimizing process/facility through data accumulation and analysis</li><li>Fundamental resolution of cause and cause of failure</li></ul>	

Detailed functions of the mold management system (optional)

Solution	Function	Feature Overview
Mold information management	<ul> <li>Mold information management</li> </ul>	<ul> <li>Integrated management of mold information (mold specification, mold image, warranty information, mold related technical documents, etc.)</li> <li>Computerized management of mold ledger</li> </ul>
	Mold grade management	Rating management according to mold aging
	Mold at-bats management	<ul> <li>Automatic calculation of mold at-bats</li> <li>Automatic Alarm occurs when the speed limit is exceeded</li> </ul>
Management	<ul> <li>Mold preservation monitoring</li> </ul>	<ul> <li>Inquiry on mold maintenance status/washing status</li> <li>Mold Position/Status Monitoring</li> <li>Automatic alarm occurs when the mold maintenance cycle arrives</li> <li>Automatic alarm occurs when cleaning cycle arrives</li> </ul>
	Mold preservation work     instruction management	<ul> <li>Establishment of Prevention and Conservation Plan</li> <li>Manage repair/inspection work instructions</li> </ul>
Mold maintenance management	<ul> <li>Performance management of mold maintenance work</li> </ul>	<ul> <li>Performance of maintenance work and management of maintenance work progress</li> <li>Preservation history management by mold</li> <li>Automatic aggregation of maintenance costs</li> </ul>
	Mold preservation standard information management	<ul><li>Establishment of maintenance work standards</li><li>Set cleaning operation cycle</li></ul>

Detailed functions of the mold management system (optional)

Solution	Function	Feature Overview
	Order management	Outsourcing of molds and management of order details for repair materials
	Warehousing management	<ul> <li>Computerized management of mold warehousing details, such as new/repair, etc</li> <li>Management of the receiving performance of repair materials</li> </ul>
Mold MRO management	Forwarding management	<ul> <li>Computerized management of mold release details, such as export to outsourcing companies</li> <li>Maintenance material shipment management</li> </ul>
	<ul> <li>inventory management</li> </ul>	<ul> <li>Real-time automatic aggregation of mold and repair material inventory status</li> <li>Mold warehouse movement processing</li> </ul>
	MRO reference information management	<ul><li>MRO item management</li><li>MRO Supplier Management</li></ul>

#### Process Operations Process

Establish an operating system that can grasp and efficiently manage on-site operation information in real time by collecting/inputting production performance data through Bar Code Label and on-site terminals or facility interfaces instead of handwritten workdays.



#### QMS Process

The quality management system can achieve quality standards/achievement levels and manage target management functions for consistent quality results, Inspection by work unit. Quality results such as tests are linked to before and after processes so that product history can be tracked.



Ultra-high end-to-end inspection operational process



- Monitoring process conditions
  - 1. It monitors process condition data in real time and automatically stores data that occurs at the same time.
  - 2. In the event of an NG, send an alarm to the operator/manager to take immediate action.
  - 3. It fundamentally prevents defects from leaking out.



#### Mold management system



### 6. System Configuration Chart

SMART BASE Network Configuration Chart



### 6. System Configuration Chart

SMART BASE deployment and operational environment



### 7. Expectation effectiveness

#### Maximize management skills

- Building a Best Practice Work Process
- Establishment of real-time management system
- Improve cost competitiveness and work quality
- efficient management decision-making

Securing competitiveness and reducing costs by increasing productivity

## Quality management and customer satisfaction

- Maintaining continuity of quality management system
- Customer satisfaction management
- Synergy effect through supply chain efficiency
- Ensuring adaptability to changes in business environment

### 8. Project Implementation Plan

- The project is based on the Inovase project construction methodology.
- Process Innovation (PI) activities align real-world tasks with system processes
- Continuous system verification by users with Open Test methods
- Standardized project execution process, application of output creation templates



### 8. Project Implementation Plan - Implementation Organization

Define the roles and responsibilities of the members of the project as follows.



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Organization name	Roles and Responsibilities					
Project Steering Committee	<ul> <li>Top Decision Making for Project Progress</li> <li>Issues arising during project execution</li> <li>Consultation and resolution</li> </ul>					
Project Manager	<ul> <li>Managing project orientation, coordination, and deployment</li> <li>Coordination and control of the progress of the project</li> <li>Calling and supervising major meetings</li> </ul>					
a warrior Technical Support	<ul> <li>Establish overall project quality control, project quality levels and standards</li> <li>Technical advice and support for applicable element technology</li> </ul>					
Customer TFT	<ul> <li>Standard Process, WBS, documentation confirmation</li> <li>Support for business analysis and requirements analysis</li> <li>Review details screen items</li> <li>Check system developments / Supervise commissioning</li> <li>Determining business specifications, checking and verifying system developments</li> </ul>					
project team	<ul> <li>Requirements Analysis and Design / DATA Standardization</li> <li>Information System-Based Design, Analysis, Implementation</li> <li>Program Development and Testing</li> <li>Prepare a test plan, conduct a test, and supplement the request for modification</li> <li>Shape management, self-quality management</li> </ul>					

### 8. Project Implementation Plan - Implementation Schedule (Building Type)

#### Construction period: 2–3 months after contract

Sortation		YYYY							
		М			M+1		N	1+2	REMARK
cu ri	Pre-interview and launch report		<b>→</b>				Deneralized		
Starting	Project Scheduling						customer's work		
	Analysis of reference information and basic data						Construction	on period change	is subject to
	AS-IS Analysis								
Analysis	TO-BE Definition								
	Department consultation confirms TO-BE								
	GAP Analysis and Table Definition				•				
Modeling	Program SPEC Definition								
Building	System Setup and Training Task-specific module customization								→
	Unit Test/Integration Test								
Freezing	Creating a manual								
	User training(see training plan)	Kick-off		the	middle				Termination
	Transferring data	Meeting		R	eport			OPEN	Report
Finish	System OPEN / Stabilization		munnin		<i></i>				
Project Management	Business management	Perform	business n	nanagement a manageme	activities ent, risk	such as scope management,	e managemer etc	t, schedule	

### 8. Project Action Plan - Action Schedule (Cloud Type/SaaS)

M+0	D+1	D+2	D+3	D+4	D+5	D+6	~ D+30	D+31	~
Preparing for the project	System	Setting							
			Visiting educ	ation (4 M/D)					
					Remote (20 h	training ours)			
					E	inter basic da	ta		
								normal op	eration
								Maintenance	Support
							Go	Live	
	Project Imple	mentation M	ethodology			Service	Operation Po	olicy	
<ul> <li>Conducting 1st intensive training through visiting training</li> <li>Basic data input and hands-on training through sweatshirt distance training</li> <li>Provide data such as guidelines for data standardization</li> <li>User Manual Support</li> </ul>					<ul> <li>Regular</li> <li>Identify</li> <li>improve</li> </ul>	r system oper improvemen ement throug	ation status cl t requirement h operational	neck s and support status inspect	t system tion

### 8. Project Implementation Plan - Maintenance Plan

 The proposer identifies risk factors in advance and establishes countermeasures to minimize risks in the implementation process. All business-related risks are systematically responded through established procedures.



### 8. Project Implementation Plan-Education Plan

It provides differentiated education programs to support successful system construction and operation. It also
provides continuous occasional education, such as providing video education materials.

#### customized training Improve system operational capabilities



#### a standard curriculum program



#### Video training materials

a standard curriculum	System User-Centered Training	an educational textbook
<ul> <li>Basic system operation training</li> <li>Basic Data Input Training</li> </ul>	<ul> <li>Support for door-to-door and remote education</li> <li>Work-on-the-job system understanding</li> </ul>	<ul> <li>User's Manual</li> <li>Video training materials</li> </ul>

### 8. Project Implementation Plan - Service System

Innovase supports smooth and reliable system use through HelpDesk and systematic customer support systems.



**SMARTBASE** Solution Information

### Attached. SMART BASE main screen

## ibMES Main Screen



# **Solution Demo**

# :Innob/se

<u>InnoBase</u>

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