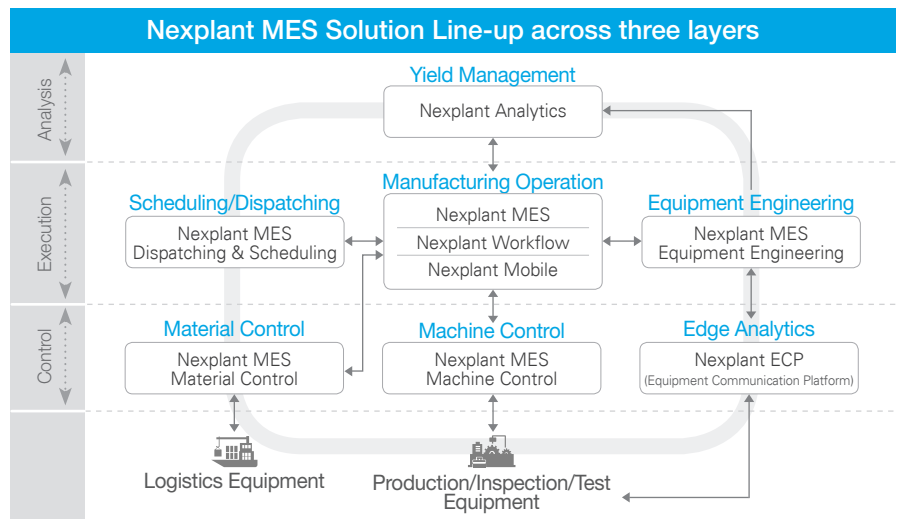# Nexplant
MES

Nexplant MES manages and controls your shop floor to optimize your entire manufacturing process

Today's successful manufacturers strive everyday to stay competitive by maximizing production efficiency, yield, and demand volatility. A successful transition to a smart factory is a must for manufacturers to maximize their competitive advantages.

Nexplant MES (Manufacturing Execution System) solution optimizes the entire manufacturing process by managing and controlling all your manufacturing information. Samsung Nexplant MES, boosts productivity by greatly reducing the average manufacturing lead time and stabilizes manufacturing execution based on reliable source of information. Your decision makers gain deeper insights through greater visibility in your global operations.

Nexplant MES Solution Line-up across three layers

Analysis

Yield Management
Nexplant Analytics

Execution

Scheduling/Dispatching
Nexplant MES Dispatching & Scheduling

Manufacturing Operation
Nexplant MES
Nexplant Workflow
Nexplant Mobile

Equipment Engineering
Nexplant MES Equipment Engineering

Control

Material Control
Nexplant MES Material Control

Machine Control
Nexplant MES Machine Control

Edge Analytics
Nexplant ECP
(Equipment Communication Platform)

Logistics Equipment

Production/Inspection/Test Equipment

Key Features

Process consulting for better manufacturing efficiency

Nexplant MES diagnoses your current manufacturing environment based on the criteria of MESA[1] to measure the maturity of 7 domains of business, IT system, and execution environment, and develops an optimized manufacturing process along with a prioritized to-do list and an implementation plan that will ultimately bring you the desired improvements derived from such diagnosis.

MESA[1] : Manufacturing Enterprise Solutions Association

Guarantee stability through best-in-class manufacturing field experience

Based on our rich experience of revolutionizing semiconductor and display plants manufacturing through full automation, Nexplant MES was proved to ensure stable operation at the 10 ppm per year level. We are also able to hot deploy system modifications in a stable manner without downtime.

Analyze manufacturing data quickly and accurately

Nexplant MES analytic function using large-scale and high-speed parallel computing technologies based on in-memory analyzes subtle patterns of up-to-the-second equipment sensor data. This ensures that even novice analysts such as field engineers can easily analyze manufacturing data and identify opportunities for improved operational efficiency and quality.

SAMSUNG SDS **SAMSUNG**

Key Modules of Nexplant MES

Analysis Layer

Nexplant Analytics : Yield Management

Nexplant Analytics is a quality analytics system that collects and performs statistical analysis of work in process, yield, and quality data to achieve improvements in production efficiency and quality. Inline data measurement, defect/parameter/fail pattern analysis, and yield monitoring provide deep insights into the performance of the manufacturing equipment for yield improvement.

Execution Layer

Nexplant MES_Scheduling & Dispatching

Scheduling & Dispatching is a factory planning system that generates production plans for each process and prioritizes work orders in real time. Scheduling deals with workload allocation to each process and equipment, and manages the target work orders. Dispatching deals with selecting the target lot or equipment in real time based on the production plan.

Nexplant MES_Manufacturing Operation

Manufacturing Operation is a factory operation system that manages the production process and resource. It sets up and manages the manufacturing BOM (Bill Of Material), master data, and raw materials. Lot tracking deals with tracing the work in process and managing the production plan. Tracking & tracing deals with managing the performance and productivity of each production line.

Nexplant MES_Equipment Engineering (SPC, RMS, FDC, EPT)

Equipment Engineering is an equipment engineering system that collects, processes and automatically analyzes sensor, event, log, and alarm data generated during the course of manufacturing. It analyzes the condition and quality of machinery and accessory equipment to achieve improved yield and better efficiency.

※ SPC (Statistical Process Control)
RMS (Recipe Management System)
FDC (Fault Detection and Classification)
EPT (Equipment Performance Tracking)

Control Layer

Nexplant MES_Machine Control & SEComEnabler

Machine Control & SEComEnabler is a machine automation solution that supports a standard machine protocol and high-speed data processing. It automatically collects and standardizes equipment data based on a standard protocol through connection between the production machine and the production execution system, and automate the factory driven by remote equipment control. SECS Modeler deals with EAP modeling development and test. Work Space Manager ensures management of multiple production lines by even few people.

Nexplant MES_Material Control

Material Control, designed for fully automated factories, is a logistics control system that controls logistics equipment in the plant to optimize the transport routes of production materials. After receiving a command from the MOS for logistics return, it sets up the route and manages the returned equipment. It also keeps the time of material movement and return by carrier at the manufacturing site as short as possible.

Nexplant MES_ECP (Equipment Communication Platform) : Edge Analytics

Nexplant ECP is an equipment engineering solution that diagnoses target core equipment in real time. Through readings from the TSP/Box attached to each equipment, it can collect and store equipment data in real time. It also detects equipment anomaly and gains insights from single equipment health indices to forecast the best timing for preventive maintenance on equipment.