

# SIGMA MES control system for painting plants

## Ansprechpartner



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## About our AutoID and RFID solutions

AutoID and RFID solutions for production, logistics and supply chain. Our customers appreciate us as competent, innovative partner, to accompany them from the initial problem analysis until the goal with commitment. Many years of project experience of our employees form the foundation for effective AutoID and RFID solutions for production, logistics and supply chain.

## About GRAIDWARE®

The AutoID middleware GRAIDWARE® is an intelligent abstraction layer for different hardware components and business applications. Work tools, production steps and AutoID data can be identified, monitored, controlled and configured.

## About SIGMA

As a reputable system house in Saxony SIGMA Chemnitz GmbH operates as system integrator and partner of well-known Providers in the IT sector. Our over 80 employees at the Chemnitz and Dresden sites form a competent team at the location Chemnitz. With expertise, competence and almost 30 years of experience we offer our customers reliable and powerful solutions.



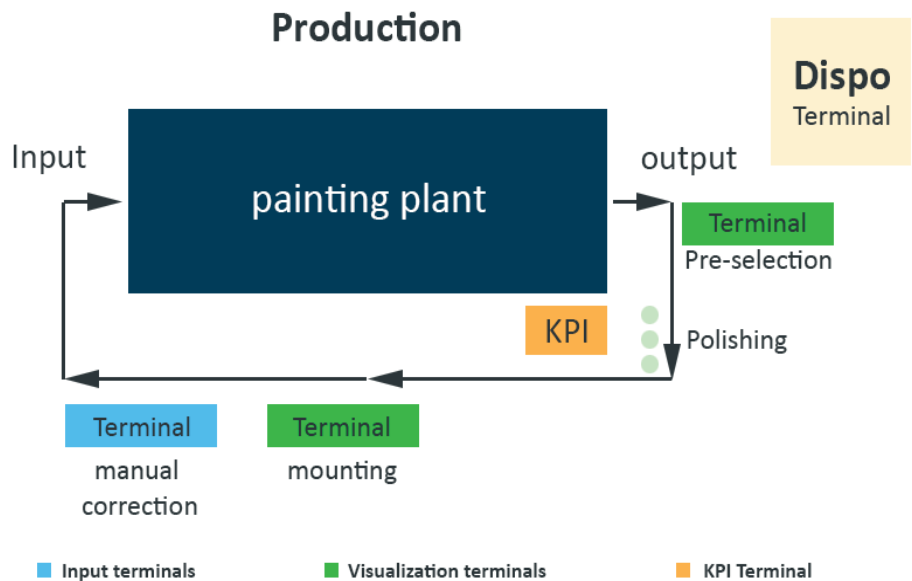
## The solution for increasing efficiency in manufacturing

The Manufacturing Execution System (MES) digitalizes planning, control and quality assurance for the optimized operation of painting plants. The use of the SIGMA MES leads to paperless production.

Core functions of the MES system are central order control via a **scheduling terminal**, visualization of orders on so-called **line terminals**, **PLC integration via OPC UA**, integration of the existing **ERP system** (master data, orders, quantity postings), recording and evaluation of quality parameters for **quality assurance**, administration of users and raw materials as well as **reporting**.

If required, this software solution can be extended with a component identification via RFID technology.

## MES application example in a painting plant



## Functions of the MES for painting plants

### 1. central order control via a dispatcher terminal

- Integration of the orders planned by the ERP system
- Round robin planning using copy & paste function (multiple)
- Checking and releasing orders
- Automated information enrichment (e.g. documents, images, machine programs) of orders through freely definable metadata
- Manual detailed planning by prioritizing, moving, splitting, merging of orders possible

Configuration					Terminal				
Number	Sig	Color	Quantity	Desc	Number	Sig	Color	Quantity	Desc
1	R	Black	10		1	Empty Skid	Empty		
2	R	Black	10		2	Empty Skid	Empty		
3	R	Black	10		3	Empty Skid	Empty		
4	R	Black	10		4	Empty Skid	Empty		
5	R	Black	10		5	Empty Skid	Empty		
6	R	Black	10		6	Empty Skid	Empty		
7	R	Black	10		7	Empty Skid	Empty		
8	R	Black	10		8	Empty Skid	Empty		
9	R	Black	10		9	Empty Skid	Empty		
10	R	Black	10		10	Empty Skid	Empty		
11	R	Black	10		11	Empty Skid	Empty		
12	R	Black	10		12	Empty Skid	Empty		
13	R	Black	10		13	Empty Skid	Empty		
14	R	Black	10		14	Empty Skid	Empty		

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## 2. visualization of orders at the line terminals

on reaching the production / assembly site including parts to be installed and linked documents

- Display training documents for system operators
- Overview of the order planning (completely partial)
- Input of downtimes

## 3. SPS Integration mittels OPC UA zum Senden und Empfangen von Daten

### Scope of functions

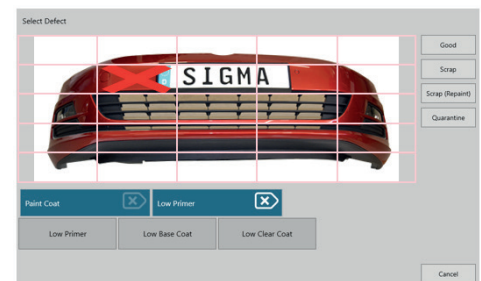
Terminal position	Open painting plan for this workstation
Complete painting plan	Open complete painting plan
Training documents	Open training and tutorial documents
Disruption	Open disruption documents

## 4. comprehensive user administration

- Multiple registration by workers
- Supervisor authorizations

## 5. quality assurance

- by calling up digital training documents at the line terminals
- Detailed inspection of the individual components
- OK / NOK booking with transfer to the ERP system
- Step-by-step defects recording on the basis of defined defect characteristics / defect zones (also multiple)



## 6. stocktaking and administration of raw materials

- Scanning of individual components or containers using a handheld device
- Transfer of the data to the ERP system

## 7. reporting / monitoring

- Basis are the data collected and stored in the process
- Creation of individual key figure dashboards
- Visualization of the key figures at the terminal
- Visualization / presentation of the key figures on Android end devices

