



## SinaproMES – Smart MES/MOM System for Industry 4.0

### Functions:

- Real-time data acquisition from all the factory resources (i.e. assets, machines, workers and objects)
- A system that enables the real-time monitoring and optimisation of production operations
- A constant optimisation of quality and resource usage
- Efficient energy monitoring and energy management
- Sustainable manufacturing through synchronisation with shop floor automation and supply chain management systems
- Detecting, measuring and monitoring the variables, events and situations which affect the performance, energy use and reliability of the production at factory level
- Flexible and automatic analyses and reports (overview of KPIs)

### SinaproMES supports the requirement for addressing the challenges of Smart Factory (Industry 4.0):

- Flexibility ( Flexible Software Customization), Mobility (Mobile access to manufacturing data), Shop Floor Connectivity (Universal Machine Connectivity offered by IoT), manufacturing Intelligence (real time data analysis)
- The Right Way to Lean and Highly Efficient Production

## Data collection

- Automatic collection of data from machines – independently of employees:
  - equipment status, standstills
  - quantities produced, rejections
  - machine parameters, product measurements
- Event entry (entered by production employees using touch terminals)
  - start/end of work on work orders
  - explanation of standstills and scrap
  - maintenance calls
- Entry of information on work performed (using a PC)

## Scheduling (microplanning)

- Scheduling of work orders and operations on machines according to timelines
  - graphical editing of work orders
  - display of work order status (in progress, standstill, completed)
  - automatic calculation of operation duration
  - optimisation of scheduling
- Warning of conflicting situations in scheduling
- Exchange of data on open and scheduled work orders with business information systems (ERP)

# SinaproMES

Management of production,  
quality, maintenance and inventory

## Tracking

- Tracking of products through the production process
- Tracking of batches/lots of materials used
- Tracking of machinery, tools and human resources used
- Tracking of energy consumption by machines
- Recording of captured data according to product serial numbers, batches, packaging units

## Analyses and reports

- On-line view – current status of machinery and equipment in production:
  - machine mode, utilisation, number of pieces
  - work orders produced on machine
  - employees using machine
- Analyses of collected data
  - on pieces and hours used
  - on standstills and types of standstills (short/long)
  - on equipment parameters and product measurements
  - according to work orders/batches, employees and products in a given period
- Monitoring of key performance indicators
  - OEE – overall equipment effectiveness
  - standard and custom indicators

## Quality

- Coordination, implementation and tracking of quality measurement and reporting activities:
  - process verification, measurement of initial samples
  - periodic and final inspections
  - product certification
  - equipment capacity measurement

## Maintenance

- Recording of maintenance activities on machinery, tools and other equipment
- Scheduling and coordination of reactive, periodic, preventive and proactive maintenance
- Tracking of maintenance activities

## Inventory (material resources)

- Management of the status and movements of all material resources (products, production materials, maintenance and quality assurance materials and other material items)
- Scheduling and tracking of material resources
- Measurement and reporting on movement efficiency

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