The scalable MES solution for your production demands

- Scalable from small R&D lines up to high volume production facilities
- Largest set of functionalities available on the market – to be flexibly adapted to customers’ needs
- Proven integration strategies and interfaces available for a huge number of equipments
- Existing integration solutions for major ERP systems – to facilitate data integration with customers’ ERP
- Full service provider for your entire IT environment – products as well as analysis, specification, roll-out and operational support from one source
- Expansion modules for APC, Scheduling, Planning, Automated Material Handling, Data archiving available – to tailor the environment to your demands

The MES framework with high performance function modules

- Graphical visualization of manufacturing information
- Analysis of equipment performance data, using E10 / OEE standards
- Automated collection of process and material data
- Process monitoring and observation capabilities
- Complete traceability of material, from raw material to the product, even without physical ID
- Work-in-Progress management (WIP) and consumables tracking; integrated service and maintenance system
- Production planning and material routing functionalities

Benefits

- Direct improvement to production performance
  - Yield monitoring, analysis and improvement
  - Throughput monitoring and optimization; quality analysis and process optimization
  - Equipment uptime and OEE improvement
- Production control and management
  - Order management and ERP integration
  - Workplan management for material routing and process step configuration
  - Recipe management
  - WIP visualization and single material tracking
- Transparent production
  - Production dashboard with real time manufacturing data
  - Process visualization and observation using online SPC
- Time is money – fast integration
  - Pre-built components for Reporting, GUI and process flow available
  - Built-in interfaces for SECS/GEM, PV02 and other industry standards
  - No IT experts needed - setup of process flow, equipment by configuration
FabEagle®<sub>MES</sub> - Product Description

**Manufacturing Visualization**
You obtain full production overview from all work areas with FabEagle®<sub>MES</sub> and access detailed information on an interactive basis. Customized and animated graphics guarantee user-friendly access.

**Equipment Performance Analysis**
The system inquires the state of every equipment in your production at any time, automatically or manually. Equipment errors and production performance information are captured and stored. This allows the calculation of important equipment performance indicators (for example MTBF, uptime) and provides automated OEE calculation methods in order to measure your production.

**Process and Material Data Collection**
For each manufacturing step, all process and material data are collected from the equipment and made available for enhanced data analysis tools through the FabEagle®<sub>MES</sub> database. Integrated single material tracking enables comprehensive analyses methods. Online SPC as FabEagle®<sub>MES</sub> module observes parameters and alerts your engineers while leaving defined process windows.

**Order management**
The Order management synchronizes orders with ERP systems or is administrated manually. Work plans are attached to orders to control production. All relevant data for material and processes are stored in the database.

**Work plan management**
The Work Plan Designer of the FabEagle®<sub>MES</sub> supports you to flexibly define manufacturing procedures for a product at each product step. It is also used to assign the equipment as well as relevant formulas and parameters. You are able to configure any process sequence virtually with conditional branches, loops and skips. FabEagle®<sub>MES</sub> uses the information for production control or even automated transportation.

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**MES for more efficiency and transparency**

<table>
<thead>
<tr>
<th>ERP Level</th>
<th>Enterprise Resource Planning System</th>
</tr>
</thead>
<tbody>
<tr>
<td>MES Level</td>
<td>Order Management</td>
</tr>
<tr>
<td>Production Control</td>
<td>Dispatcher</td>
</tr>
<tr>
<td>Workplans</td>
<td>Recipe Management</td>
</tr>
<tr>
<td>Production Level</td>
<td>Equipment Integration (Cell controller)</td>
</tr>
<tr>
<td>Cell Level</td>
<td>Graphical User Interface</td>
</tr>
</tbody>
</table>

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**Crystallization**
**Wafer Production**
**Cell Process**
**Module Manufacturing**

**Manufacturing Execution System (MES)**
**FabEagle® MES - Product Description**

**Material Tracking**
In addition to quality-relevant data, FabEagle® MES processes and stores material data and tracking information. Using these data, material can be traced completely, from the raw material to the finished product. Correlations can be determined during processing and visualized in comprehensive reports and evaluations.

**Office & Operator Workstations**
FabEagle® MES provides production personnel like engineers, supervisors and operators with individual customizable user interfaces for their working areas. The workstations display all necessary manufacturing and process information and data can be typed in manually.

**Maintenance Management**
The integrated service system allows the provision of service plans, controls their execution and documents the results for future reports or evaluations. Equipment and process data can be used to define the service intervals on demand.

**Built-in reports**
FabEagle® MES offers pre-built functions for the analysis of recorded product and material information as well as the equipment data during the production process. Reports can be configured by your users and sent out automatically using scheduled reporting functionality. The integration of external reporting tools is possible if additional reports need to be created.

**Integration of an ERP system**
Master data such as product definitions or raw material are synchronized and order data are imported into the MES. Vice versa, data on order status, interim status of completed process steps, finished products and consumption are provided. This results in fully automated bookings in the ERP system, which also provides you a maximum of production transparency.

**High-performance database management and archiving**
FabEagle® MES offers a sophisticated mechanism to increase the performance of your database. By using its own replication, the data is split into production-related quick data access and long-term storage. The data can be stored for several years without affecting current production. An archive function is also provided for the secure archiving & recovery of data on external media.

**Features of FabEagle® MES at a glance**
- Graphical visualisation of manufacturing
- Order management
- Linking to ERP systems
- Evaluation of equipment data (OEE, uptime, ...)
- Data acquisition of process and material data
- Comprehensive evaluation of stored data
- High-performance system design, scaleable from small lines to mass production
- Data access using the latest web technologies
- Integrated service and maintenance system
- Complete traceability of materials, from raw materials to the finished product, even without physical identification
- Integrated expert system and equipment log book
- Display of process data (trends, bar charts, X-Y diagrams...) and statistical process control
Information about AIS Services for FabEagle®_MES

Services
As well as providing standardized software solutions, AIS is able to offer you comprehensive know-how and services for all phases of your project.

Design and specifications
With our experience from more than 200 successful automation projects, we can support you during the planning phase of your new production, in the specification of the IT structure for your manufacturing facility and, together with our partners, with the simulation of your planned manufacturing. Furthermore, we can support you during the equipment evaluation process to address automation needs with your equipment suppliers and monitor their automation capabilities with our established ACM methods.

Integration of equipment
AIS can handle all tasks necessary for equipment integration, starting with interface specifications, automation capability management (ACM), On-site testing and integration of the equipment into your production.

Production control
Based on our software solutions we will install your complete manufacturing systems, integrate the equipment, supply standard production reports, and support production personnel with the most advanced Dashboard and GUI capabilities.

Process optimization
With the information stored in FabEagle®_MES and your additional manufacturing systems, we can support you with the integration and analysis of all of your process and manufacturing data as well as designing and implementing of APC solutions.

Brief summary of AIS Automation
For more than 25 years AIS Automation Dresden GmbH has been supplying innovative software solutions for factory and production automation, equipment integration and equipment control. We will support you over the entire life cycle - from specification, via installation up to customer service. Our software solutions are deployed in semiconductor, photovoltaics, automotive and other high-tech manufacturing industries.

135 experienced and committed engineers create, develop and install our software solutions for your production needs in close cooperation with you. AIS accompanies you over the entire life cycle and is available as a competent partner from specification, via implementation and installation, through to comprehensive customer service.