OrgaTEX.MES
Production and performance management software for textile finishing

www.setex-germany.com
Making money in today's textile finishing market means handling an economic, efficient and versatile production with high speed and quality.

Customers worldwide turn to SETEX for solutions that bridge the gap between machine automation, smart data management and 3rd party integration, while maintaining open standards that make it easy for facilities to mold SETEX products around their existing workflows.

Production machine supervisor or Manufacturing Execution System – OrgaTEX can cover both. The software suite is composed of scalable modules. Start low and built as you grow to suit continuously the desired level. With SETEX you have one supplier for MES software and machine automation.

**One-stop shop synergies**

Top-down or bottom-up: SETEX systems profit from being both. Knowing every single parameter of a dyeing or finishing machine allows smart data handling in the supervisor and MES software.

Evidence-based key-numbers allow
- Shortening “Time-to-Market” of the products
- Increasing the product transparency and flexibility
- Planning optimization
- Reduction of downtimes
- Lowering production costs

Transparency, consistent documentation and traceability with OrgaTEX.MES make every company secure and profitable. Planning on real-time conditions improve responsiveness and productivity to a maximum.

**Management key-numbers**

- Know-how protection
- Lasting investment
- Production performance
- Resource productivity
- Target and plan

**OrgaTEX.MES**

Transparency and resource productivity at your fingertips
Administration key-numbers
- Central multi-source information
- Wide variety of reports and visualization possibilities
- Analysis of production, efficiency, downtimes, shifts, ...
- Standardization

Process engineering tools
- Reports, alarms and extensive data-logging
- Bottleneck management
- Data copy-and-paste to analysis applications
- Fast introduction and knowledge transfer with universal platform
- Process standardization

Energy and environment assessment
- Energy efficiency (electricity, steam, oil, gas)
- Utility management (hot water, water discharge)
- Tools for carbon footprint

Diagram:
- Vertical integration: ERP
- Horizontal integration: Production floor
Dyeing Manufacturing

Process development, production scheduling and monitoring

Process development

The OrgaTEX “Program Editor” program helps you manage all of your process information during the pre-production phases.

The creation and administration of complex dye processes is considerably easier and much more efficiently done on a PC.Repeatedly used process sections (prewash, bleaching, soaping, after treatments) are created as flexible treatments instead of a fixed process in order to be used multiple in many different dyeing procedures. This workflow leads automatically to few Standard Operation Procedures (SOP) which make everyday optimization easier and increase reproducibility and savings.

Features

- Graphical and tabular forms
- Temperature/time curve
- Variable function parameter with formula integration
Production scheduling
An interactive and graphical planning system for scheduling with medium and short term outlook and real-time production progress control and visibility.

The online “Batch Scheduler” is an optimal tool to reduce the daily routine work in a dye house office to a minimum.

Features
- Electronic planning board
- Batch scheduling
- Use of templates
- Batch can be moved per drag and drop
- Deadline monitoring
- Preparation and addition treatment processing
- Selection and display of production downtime

Production monitoring
OrgaTEX “Online Status” permits total visibility of machine, process and deviation information. Collecting data and the possibility of real-time interventions during batch runtime at the single machine level unlocks a wealth of detailed data and opportunities that can drive organizational efficiency. All centrally from a workstation in the office – with OrgaTEX you have your manufacturing under control.

Features
- Display of actual process and machine data
- Correction of process parameters
- Interventions during unforeseen incidents
- Online analysis of the process data
Reporting and Analysis

Real-time analysis of the process and product related data

Transform your production data into information to calculate and improve your results
Information transparency and reliable data across different systems are important for a continuous improvement. The OrgaTEX system is gathering this data from the connected SECOM controllers, standardized interfaces to ERP-systems and e.g. dispensing systems. The result is a centralized valuable asset for a product and process related reporting.

With the OrgaTEX analysis and report management system you have the tool for predefined standardized reports and also a customer and case specific analysis.

Resource analysis
The resource or process related reporting provides information about the machines which have been used to produce a product.
• Machine and production utilization including maintenance
• Reduce your stock
• Increase the transparency of your production
• Machine performance against the target

Product analysis
The product related reporting provides information about the products which has been produced.
• Right first time quote (number of additions)
• Batch report/used chemicals and colorants, batches per recipe
• Targeting versus result for a production (t/day)
• Total production costs
• Product costs per kg fabric

Production overview

![Production overview](Image)
Fault/weak point analysis
The fault related analysis in combination with the “Online Status” module is providing the basic data for a weak spot analysis.
- Process runtimes
- Alarm messages, reports
- Consumption of water, chemicals, dyestuff
- Problems with dosing, liquor ratio etc.
- Comparison of current with history data

Closed loop information
With the direct interfaced production equipment our portfolio is providing a closed loop information carrousel.
- Evaluation of variances and their causes
- Identification of deviations
- Checking the effectiveness of measurements and defined activities (plan, do, check, act)
- Documented manual changes (e.g. manual intervention on a dyeing controller)
- Historic data (production cost, energy costs, utilization)
- Basic data for a performance-based incentive for workers

Benefits and advantages
- Individually configurable report documents
- Manual, cyclic or event orientated reporting
- If requested: access to all product and process data for a third party reporting tool
- Export to MS-Office

Report examples
When large numbers of different items are being used for different production steps simultaneously, people must manage dozens of requests just in time. With the support of objective data acquisition, based on up-to-the-minute information and substantial reports, a production increase of 15–30 % can be achieved.

With the SECOM CE based controller generation, SETEX provides an “all-in-one” solution for the acquisition of production up- and downtimes (PDA). The machine controller is used for both: to manage the machine control AND as a terminal for production data acquisition. In combination with the OrgaTEX PDA module a flexible and fully integrated system is available.

**Controller operation**
Easy selection of stop reasons per machine group at your fingertips with hotkeys.

**Software options**
The PDA module functionality is deeply integrated into OrgaTEX “Batch Scheduler” and “Reporting”. The batch scheduler history visualizes on-click downtime times and reasons. Scheduled downtimes (e.g. maintenance) are integrated into the fine planning visualization and allow precise online production planning.
Plant Navigator

A comprehensive tool kit for smart data management

The “Plant Navigator” tool kit is developed to enable a interaction in real-time of the various production processes running on dyeing/finishing machines and utility applications.

“How can I increase the utilization rate of my chemical dosing?” “Plant Navigator” can compare a dosing call with the recipe of the next batch and group the quantity automatically to save dosing and preparation time.

Sharing resources as hot-water drain pipes, priority use of recycling water or heating energy in connection with a hot water management system – these are just some examples where the smart data management of “Plant Navigator” can optimize standard production processes on the fly. “Plant Navigator” helps to safeguard the environment and saves cost and energy.

Plant Navigator is composed of

- Display tool for real-time visualization of processed information
- Formula smart data management for interactive online-PLC values adjustment through application specific algorithms
- Reporting tool

Plant Navigator display tool

Visualization possibilities based on direct interaction with machine PLC values provides completely new possibilities for production supervision. Any value of any machine on one screen allows focused immediate actions. Monitoring on one central place: the users can check on one view that the production performs as defined.

The graphically appearance is customizable in many ways:

- Pictures, floor plan
- Numerical fields to display PLC values
- Controller state information also processed by smart data analyses
- Batch information

Plant Navigator formula smart data management

OrgaTEX “Plant Navigator” is composed of an advanced data analysis for the decision making process. The application specific algorithms can easily be accessed and altered. A background tool periodical analyzes PLC values with application specific algorithms and aligns program steps against special rules.
Production Recipe

Tools to help dyers drive the production forward

To ensure consistent, accurate production from laboratory to final inspection OrgaTEX provides an integrated, flexible “Recipe Management” module. Today’s integrated technology in textile finishing, e.g. machine controllers and automatic dye kitchen systems benefit if recipe and process information is managed centrally and shared easily and securely.

Adaptive recipe structure

For a quick start, the recipe editor provides easy to use functions where the necessary items (colorants, chemicals, parameters, text) can easily be picked with just a few mouse-clicks to form a simple list of items recipe (BOM = Bill Of Material).

By combining the recipe with the production process, the BOM can be organized as a flexible combined process of recipe and treatment modules.

An efficient and powerful structure for everyday production use can be achieved with sub-recipes, treatment modules and entire templates.

Intelligent processing

Using the optional OrgaTEX “Formula” module product quantities can be substituted by rules, which automatically connect parameters with look-up tables containing experience of dyers and suppliers.
**Results throughout the company**

- Enhance the process reliability
- Enhance the production flexibility
- Shorten “time-to-market”
- Storage and use of process know-how
- Cost calculation and data transfer to controlling
- One button click converts the recipe into a batch ready for production

**Features**

- Product data management
- Quality/style management
- Customer management
- Recipe and process management
- Production management
- Color matching integration
- Lab dispensing integration
- Integration with dye kitchen systems
- Inventory module
- Formula/rules module

**Stock Management**

Cost of colorants, auxiliaries and a high variability in production require as much transparency as possible for product inventory. Stock amounts, real-time consumption withdrawals and just in time orders for required products below stock minimum is essential for a continuous and on-time production.

**Features**

- Specific stock conditions (minimum, optimal amount and drum capacity)
- Consumption reports with flexible criteria
- Stock reservation on batch disposition
- Real-time stock update on batch completion
- Order list with product amounts below stock minimum
- Cost calculation of stock quantities

**Lab2Bulk**

Integrating Datacolor laboratory software modules into OrgaTEX with the Lab2Bulk module has a markedly favorable effect of better processes for maintaining accuracy, transparency and standards from laboratory to production.

Three modules form the interface:

- **DataSync** echoes data of quality-fiber-affinity, product and dyes, dyestuff class, combined process reference and customer to keep data synchronized.
- **LabRecipeImport** picks automatically tagged laboratory recipes from the Datacolor database into OrgaTEX and auto-selects the appropriate production treatment (process) to generate a complete production recipe.
- **ProductionCorrection** transfers batches with status “sampling” to the Datacolor laboratory software for instrumental production correction.

**Online production correction with spectrophotometer**

**Features**

- Import laboratory-recipe information to save resources and avoid retyping errors
- Auto-assignment to the correct OrgaTEX process or template/treatment combination
- Sharing the necessary root-data to streamline data handling
- True color batch display in the OrgaTEX scheduler (graphical planning)
- Easy and online instrumental production correction and addition calculations
- Enhanced manual correction possibilities
Formula Management

The universal engine for smart data management

SETEX knows about the challenge in today’s data management for textile dyeing and finishing. OrgaTEX “Formula Management” adds more flexibility with intelligent treatment parameters, look-up tables and rules which interconnect all available data – online and offline – for individual specific requirements.

Variable parameters can be configured to meet your needs: If you can express it – we can make a formula out of it. Working with such formulas will reduce the number of treatments and processes in the system and increase the variety of use for every single treatment by working like a dyer would do.

Flexible use

- The batch length automatically sets the machine winch speed and pump pressure
- The color recipe automatically selects the best production treatment
- Number of rinse cycles is chosen by the salt concentration
- Reports are composed by rich data
- Energy load decides machine utilization

Predefined rule areas

- Program Editor
- Recipe
- Reporting
- Plant Navigator
- SECOM data request

Return on investment

Up to 15% production cost savings have been reported through shortening batch runtimes, chemicals and energy savings and production process maintenance and optimization.

IF_QualityName="RapidPolyester" THEN
_WinchSpeed = 380
END_IF
Energy Management
Solution for economic and environmental optimization

Sustainable production means to optimize water emission, energy consumption and resource productivity. With the new “Energy and Utility Management” SETEX covers this area with innovative product variants.

The main energy consuming departments in textile finishing are pretreatment, dyeing, printing and finishing. Right the area where SECOM controllers are driving the production. For companies using an internal boiler house, the other half of consumption might flow into here.

Energy management workflow
After energy flow evaluation and assessment, the consuming machines and devices will be integrated for data collection and analysis. SECOM controller will monitor the required consumptions, temperatures, levels, pressure, conductivity and other more.

Seamless evaluation of energy saving potential
To calculate the energy saving potential, overall demand and consumptions have to be consolidated. A customer specific configured SECOM controller will monitor and visualize.

Active avoiding energy peaks
Electricity consumption for example is projected by trend analyses based on up-to-the-minute information of all linked machines. Smart data analysis can automatically run an alternative program step if the production allows such interventions. The energy load is balanced to avoid an energy peak without influencing the volume and quality of production. The machine may stay on hold, on alarm, changing hot water preparation and many more.

Smart data management
The OrgaTEX “Energy Management” module is composed of an advanced data analysis for the decision making process. The application- and customer specific algorithms can easily be accessed and altered.

More possibilities
For a generic approach on energy management, it is possible to include the company own power plant, warm/hot water and water discharge management to the scenario.
OrgaTEX production “Weighing” module in connection with SETEX.OptiWeigh components ensures a seamless workflow from batch ticketing into color kitchen.

The software guides the operator through the color kitchen weighing process: precise, reproducible and documented. It provides quick and easy access to the information needed to ensure the right amounts are prepared. It reduces production cost with increasing “right first time”.

**Fully integrated**
- Scheduled batches are automatically transferred from OrgaTEX to the weighing controller WT2010
- Fast selection of priority jobs with a barcode scanner
- Batch/product status transparent for OrgaTEX
- Product consumption feedback to the OrgaTEX stock control module

**Working as dyers like**
- Auto-scale-selection based on product quantity
- Applies practical tolerances by scale and product
- Graphical weighing process visualization
- Single product weighing
- Package reduction weighing for large quantities
- Weighing sequence can be paused on priority jobs
- Bucket identification with partial batch tickets printout

**Connective**
- Used with the SETEX.OptiWeigh system
- Up to 3 scales are supported
- Link to paternoster units with SECOM controls

**Paternoster**
Increase the value of your paternoster with a modern SECOM controller and integration into the OrgaTEX weighing workflow:
- Weighing process drives paternoster product in pick position
- Product identification by barcode or signal
- Weighing sequence waits for paternoster confirmation
Dye Kitchen Systems
Streamlined production with OrgaTEX integration

The phrase “savings on chemicals” is most appropriately used with centralized dye kitchen systems due to improved hardware and controlled weighing and dissolving. Most likely these systems will not fulfill the expectations if they are used as isolated application. Extended time and effort for recipe administration and manual operation cause inefficiency and low reproducibility.

OrgaTEX takes care that your automatic color kitchens and dosing systems work precisely in sync with machine controller calls. The logistics for charge-tanks and preparation-tanks provides features for “look-ahead” functions with “batch overlapping” dye lot preparation.

Integration considerably simplifies the operation of dye kitchen systems if recipe and preparation data is managed and calculated centrally in OrgaTEX.

Linking dye kitchen systems to OrgaTEX is provided for both departments: textile dyeing and continuous finishing machines.

With dye kitchen integration in place, preparation calls can be realized in different ways:
• Via SECOM CE controller on the production machine (discontinuous, continuous)
• Request terminal close to the production machine
• Manual activation via the OrgaTEX “Batch scheduler”

Features
• Providing dye kitchen system preparation data (product, quantity, target tank and request time)
• Dye kitchen consumption data feedback into OrgaTEX stock control
• Synchronize of error messages between dye kitchen system and production machines
• Production additions priority handling by OrgaTEX and dye kitchen system
Numerous central dye kitchen systems running in modern textile finishing plants worldwide are fully automated with SECOM CE control systems. In combination with the OrgaTEX “CDC” module you get more out of your “daily to-dos” through automatic capacity utilization control, individual generated dissolving procedures and a close connection to dye machine programs.

**Priority management**
The straight line of the current to-do list is transformed to provide priority in the preparation process for additions or calls from continuous machines or manual interventions.

**Individual dissolving**
“CDC” substitutes preassigned programs with individually composed dissolving procedures. Using OrgaTEX product information, associated values as quantity, temperature and stirring time decide the number of dosing pans and dissolving parameters.

**Instant feedback**
“CDC” shows the status of all preparations online and provides various solutions to avoid production process delays.

In case of a preparation process malfunction, e.g. tank runs out of chemical, enhanced functionality of “CDC” can adjust the program in the dye-machine to display and allow manual approach.

**Features**
- Automatic dissolving program composing
- Priority assignment of preparation processes
- Priority schedule for additions
- Equipment effectiveness control
- Detailed malfunction alarm indication
- Configurable error handling
- Tank administration
- Dosing history and reports
Laboratory Dispenser Plugin

Integration of recipe and production calls

Using laboratory dispensers became state-of-the-art to achieve consistent, accurate and stable solutions in the laboratory.

You can’t have productivity without simplicity
With OrgaTEX a link to synergy results in reliable and sophisticated 3rd party hardware in combination with easy to use central software modules as recipe management and graphical planning.

Multiple sources
Some machines allow simultaneous dispensing for laboratory dyeing and direct supply into production machines (e.g. multiple, compact dye machines). If OrgaTEX is linked to Datacolor resources and production machine controllers, a consistent workflow for both requirements is provided.

Features
- With Lab2Bulk imported laboratory recipes can be structured and completed with all available OrgaTEX recipe tools
- No need to use additional 3rd party recipe editors
- Dyeing positions are displayed on the OrgaTEX “Batch Scheduler”
- Optionally a dedicated OrgaTEX laboratory “Batch Scheduler” can be configured
- Production machine calls are managed as well through the OrgaTEX integration
Program Editor
The creation and administration of preparation data sets for a large number of article specific machine-settings for different kind of machines can easily be realized with the OrgaTEX “Program Editor”. Depending on the machine type, different input screens are available.

Using the OrgaTEX “Formula Management” module, the number of data sets can considerably be reduced with the help of variable parameters (e.g. fabric width) using interconnected look-up tables and rules.

Features
• Graphical and tabular editor
• Variable function parameter with formula integration
• Freely creatable organization structure (tree control)

Batch Scheduler
The assignment of correct machine settings or preparation data sets for all batches of the continuous machines can easily be realized by using the “Batch Scheduler”. The graphical online planning board shows transparently the actual situation of all production batches.

Features
• Electronic planning board
• Batch scheduling
• Automatic set time calculation
• Batch can be moved per drag and drop
• Deadline monitoring
• Preparation call to central dispensing system
• Selection and display of production downtime
Online Status
For efficient central monitoring OrgaTEX provides a graphical visualization of machines, process values and batch data with the “Online Status” module. The visualization supports configurable customized templates.

Features
- Display of actual process and machine data
- Process parameter tracking
- Alarm information
- Online-analysis of process data
- Automatic foulard dosage

Process Analyzer
Batch related process data can be displayed and printed with the “Process Analyzer”. The module is used for company internal information as well as for the proof of certain standards to third parties according to the quality standard EN ISO 9000 ff.
System Landscape

ERP
- Incoming goods
- Customer orders
- Shipping notes
- Invoices, ...

MES
- Master data
- Production orders
- Routing
- Back flush
  (PDA, stock bookings)
- ...

OrgaTEX.MES
- Program Editor
- Process Analyzer
- Online Status
- Batch Scheduler
- Reporting

Production floor

Bleaching
Fixation
Dyeing

Material flow
**Laboratory**

- Datacolor
- Lab recipe
  - Quality
  - Colorants
  - Process

**Dye kitchen systems**

- Paternoster
- Weighing
- Dissolving
- Dosing
- ...

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- PDA Production Downtimes
- Plant Navigator
- Production Recipe
- Stock Management (chemicals, dyestuff)
- Lab2Bulk (color matching interface)

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- Formula Management
- Energy Management
- Controlled Weighing
- Routing
- ...

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Service adapter

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Dyeing

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Drying

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Sanforizing

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Final inspection

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Stock semi finished
OrgaTEX.MES – IT strategies

Clustering, virtualization and terminal services architecture -
OrgaTEX.MES supporting your unique safety and security requirements

Data backup services are state-of-the-art. Company strategies to overcome periods when a system is unavailable (failover), to improve overall IT service management (virtualization) and to simplify the deployment and management of desktops and datacenters (TS-services) are different.

Failover cluster systems
Industrial production with a high degree of automation and integration is requiring continuous IT availability and a high degree of reliability. To ensure a level of “high availability” where machine controller can’t even notice that OrgaTEX has switched over automatically to another resource are provided through redundant cluster systems.

OrgaTEX.MES provides
- Prepared for failover cluster systems
- Resource configuration for database services, shared drives and background services to make it run on all nodes
- Seamless (real-time) failover
- Performance enhancement of the system
- Smart backup solution

OrgaTEX.MES in connection with SECOM CE controller provides
- Virtualization
- External data-storage
- Easy desaster recovery

Terminal services architecture
IT-service to simplify the deployment and management of desktops and datacenters.

The ability to access software/services quickly and roll out software updates and new applications without having to deal with today’s deployment logistics is provided through a “terminal services architecture”.

Advantages
- Easy updates – only one instance of the software is maintained
- Every terminal provides full software capabilities
- Time saving administration by using a centralized concept
- Internet/WAN remote client

Virtualization
As day-to-day IT production responsibility shifts from subject matter experts to operational generalists and capacity management emerged as a top challenge, virtualized infrastructure became best practice.
## Functions

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<tr>
<th>Functions</th>
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