

Automation
solutions for
the **textile**
industry



More than
75 years
experience in
**the textile
industry**



As one of the leading specialists in drive and automation technology, we always work closely with our partners to find the very best solution. With extensive know-how and a worldwide network of experts in the textile industry we are well suited to set your ideas in motion with an eye for the optimal solution. This is true whether you want to improve existing equipment or develop a completely new machine.

We partner with you in all phases of your projects in accordance with your individual goals and requirements. When you design an innovative overall concept, we are there to help you make it a reality.

With our regional subsidiaries, our experts are active in over 60 countries around the world, working with you to develop the best solution for your warehouse application. Around the globe, well-known customers from this sector partner with Lenze.

This is how we develop innovative solutions for the textile industry:

- Experienced experts who understand your requirements and goals
- Innovative hardware and software for the implementation of energy-efficient solutions
- Reliable drive systems for typical warehouse applications
- Open standards
- Global production with uniform Lenze quality standards
- Worldwide efficient logistics concepts
- A global service network and range of training courses offered



A photograph of a textile factory interior. The scene is filled with rows of spinning machines, each with numerous spindles. The machines are arranged in long aisles, and the spindles are colored in various shades like red, green, and blue. In the foreground, a worker wearing a white lab coat and a red cap is walking away from the camera, slightly out of focus. The ceiling is high with industrial lighting fixtures. The overall atmosphere is one of a busy, modern manufacturing environment.

Growing requirements for **textile machines**

The textile industry is facing numerous challenges but also opportunities.

Shortage of skilled workers and wage increases at the production sites force higher automation with intuitive operator guidance at the machines.

Smaller batch sizes with the associated fast changeover times and the simultaneous demand for scrap reduction require automated input of recipe-dependent production parameters.

Meeting legal requirements is a prerequisite and the digital product passport can help with this. In addition, **consistent data availability** also for the upstream processes is elementary to differentiate in the competitive textile market. How well can your machines adjust to heterogeneities and special properties of recycled components? How do they use the digital possibilities to increase machine availability?

Lenze has answers to these questions and is ideally positioned to walk the joint path of digital transformation with you.

Flexibility

Machines can increasingly be regarded and flexibly deployed as individual units. This enables a speedy response to trading activities and coverage of a broad product range by a single machine. Moreover, retooling and format changes can be carried out more quickly. The time and effort needed to launch new products are therefore reduced.

Individualization

Flexibility can be maximized to such an extent that even batch sizes of 1 are possible. This means that a very individual approach to the customer can be adopted, whereby the customer becomes directly involved in product development. The high degree of flexibility also enables faster adaptation to the needs of the market and increasing rates of innovation. A reduction of stocks – the key idea here being “Make-to-order” – is possible at the same time.

Transparency

Improved data management is the basis for inter-company networking. All process sequences are simplified due to standardized data structures. Optimized monitoring processes facilitate preventive and corrective maintenance while the entire production control system is also perfected. Servicing for customers is improved due to the use of mobile devices and track & trace options.

Availability

The early detection of problems ensures maximum machine availability. Maintenance can be planned and the need to keep fewer replacement parts in stock minimizes the amount of tied-up capital. Replacement parts can be ordered easily, delivered quickly, and installed without any learning process. This, in turn, enables greater freedom in machine procurement.

Human-machine interaction

Intuitive concepts make it easier for operators to handle complex technology and it also reduces their susceptibility to errors. Mobile terminals and open interfaces enable flexible control and access to all machines' functions. Internet technologies support diagnostics and also reduce the number of errors in production.

Resource efficiency

Digital networking can be used as a lever to enhance resource efficiency, whereby the machine adapts itself to the material and not vice versa. In this way, the consumption of material and energy can be optimally adapted and the loss of product and materials can be minimized. On top of all this, intelligently controlled motors enable energy recovery – a considerable benefit.

**Powerful performance in any situation**

In order to meet the special requirements in the textile industry, you can trust in our many years of experience in drive dimensioning and our adapted product portfolio.

This is the basis for a robust solution that has been adapted to the conditions of the respective production location. In this way, possible power supply failures due to an instable power supply can be compensated for and you are able to cope with special ambient conditions that sometimes occur such as humidity, dust or dirt.

- Intelligent systems for managing power supply failures
- Products for use in high temperature environments
- Alternative cooling concepts for frequency and servo inverter in control cabinets
- Coated printed circuit boards

A comprehensive Lenze Automation Platform: Scalable for your machine

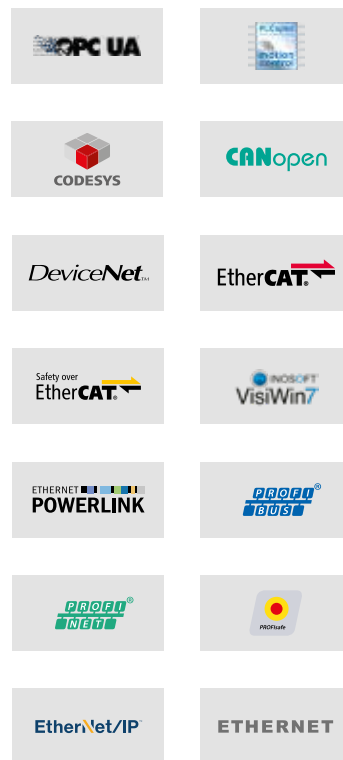
Comprehensive and open

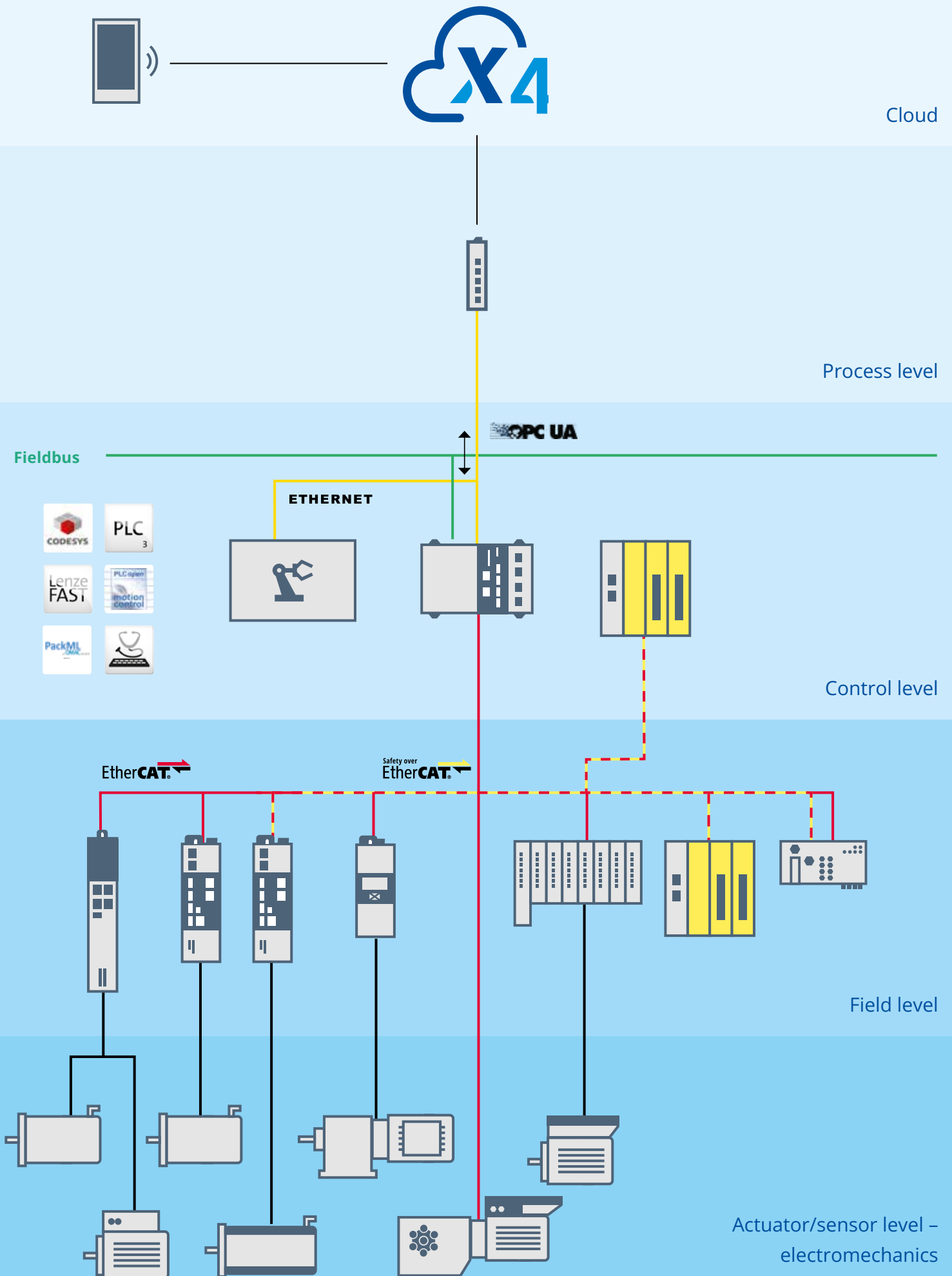
Our automation platform offers you everything from the control level to electromechanics for the implementation of a wide range of tasks. Thanks to our energy-efficient mechatronic portfolio you benefit from long-lasting quality and easy handling of all our products.


Furthermore, our platform is open for the efficient integration of components from various partners.

Compliance with market standards

We are able to network ourselves with control and drive systems at any time. This enables easy integration into higher-level line topologies. Design engineers and users can feel confident that this openness makes our platform future-proof, keeping your core expertise in-house.

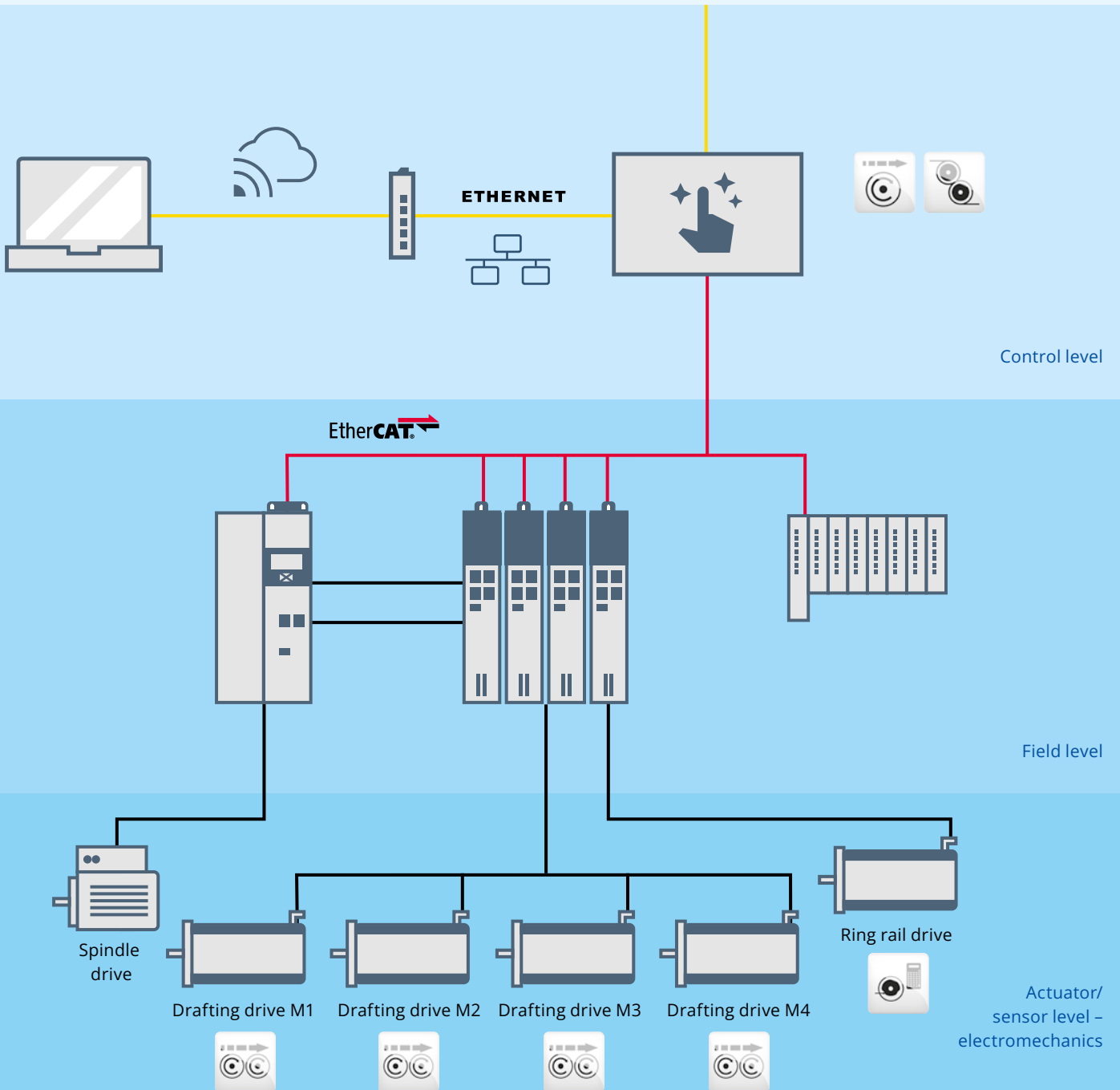
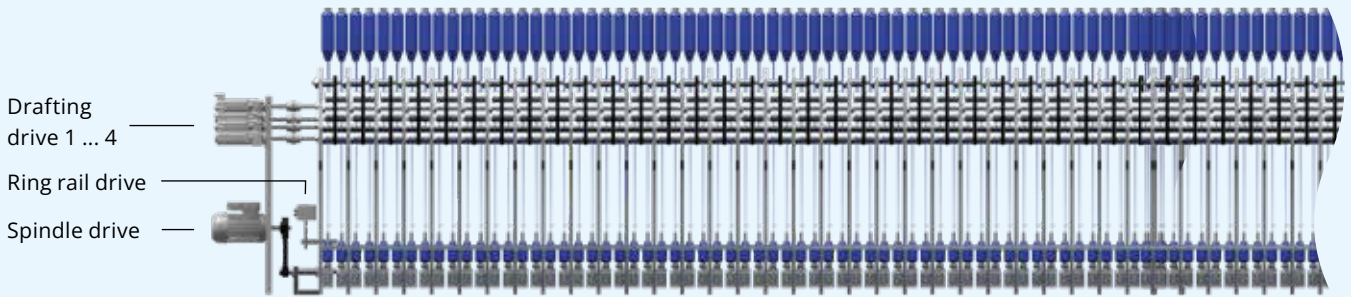






Yarn-
production:
**Make your
machine runs
like clockwork**

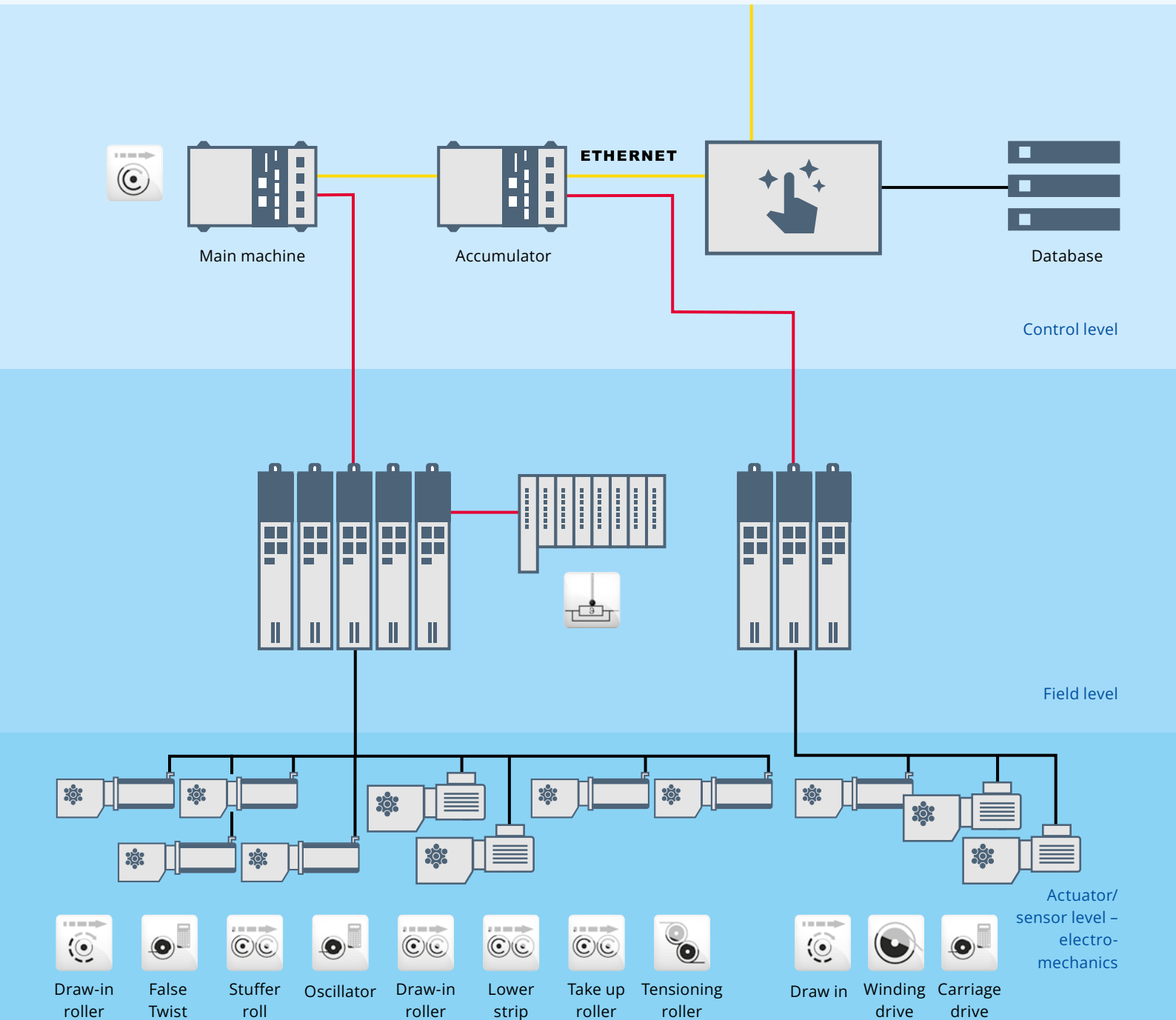
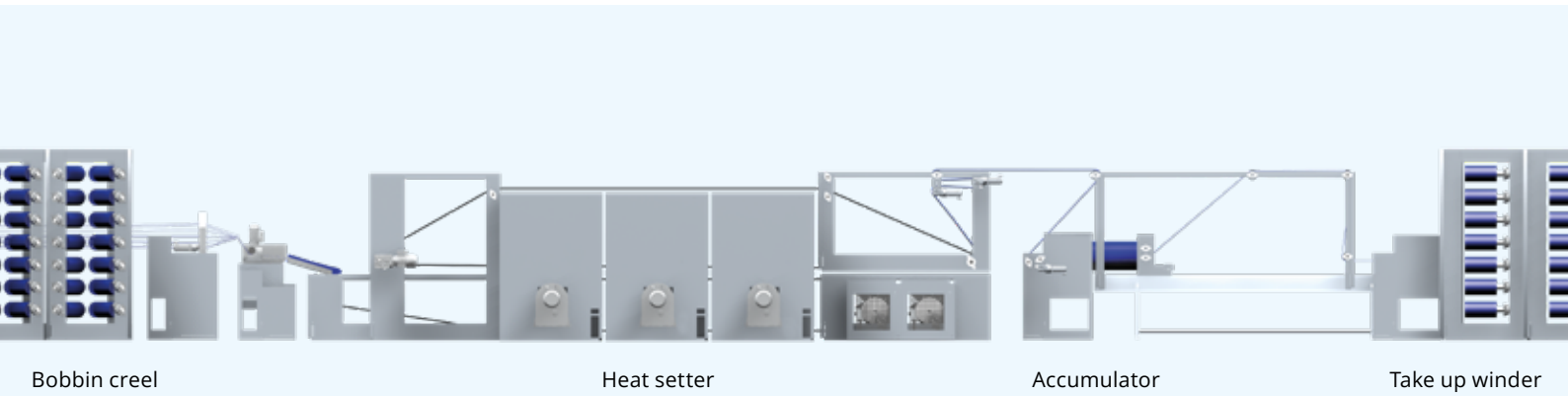
- **Easy and precise control** as well as modification of the yarn count due to the use of servo systems in the stretching machines
- **Maximum flexibility** with regard to bobbin shape due to recipe-controlled variation of the lift-to-wind ratio.
- **Greater productivity** thanks to fully automatic and therefore fast adaptation when the material is changed
- **Energy savings** due to optimized dimensioning and DC coupling
- **High degree of robustness** due to compensation of short interruptions of the power supply
- **Always informed** due to feedback of production data and energy consumption in real-time





Yarn-
production:
**From standard
to something
special**

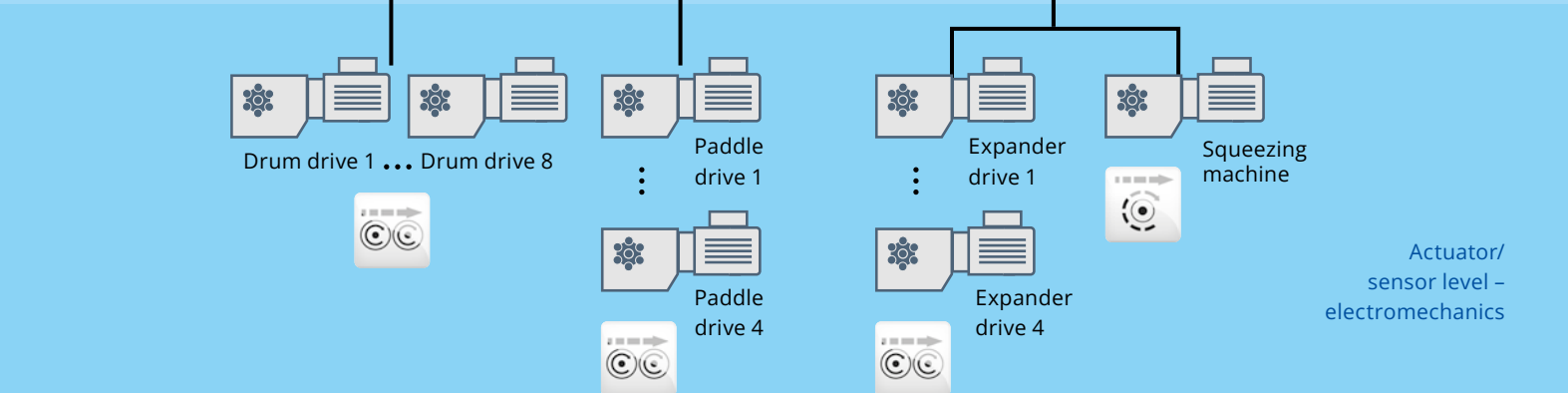
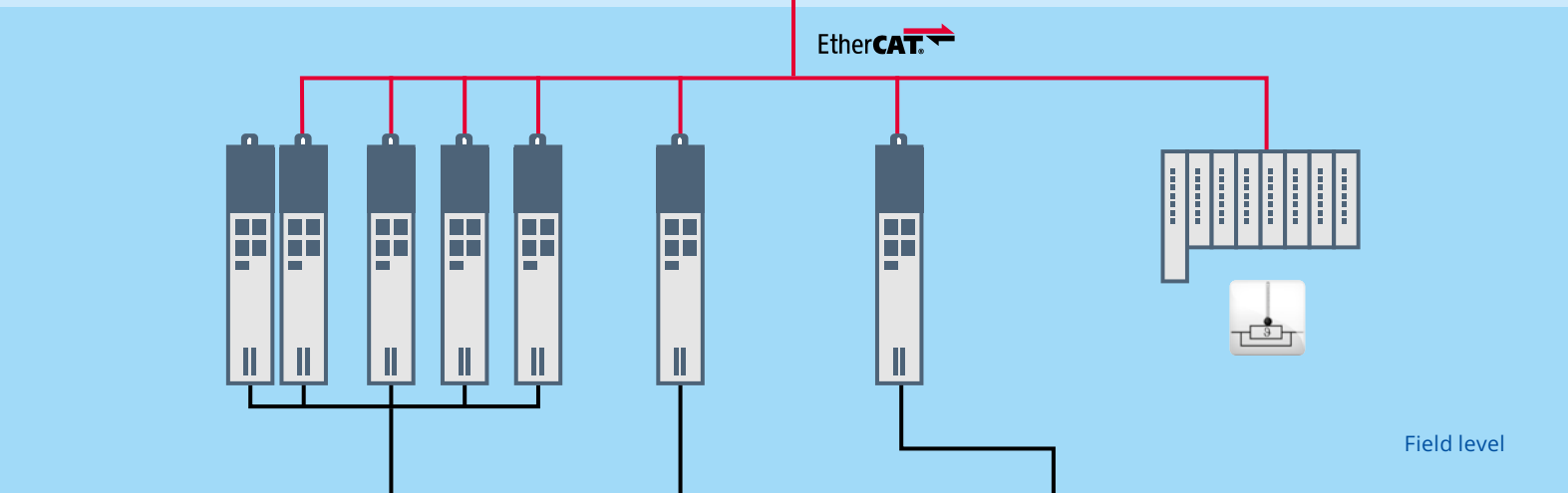
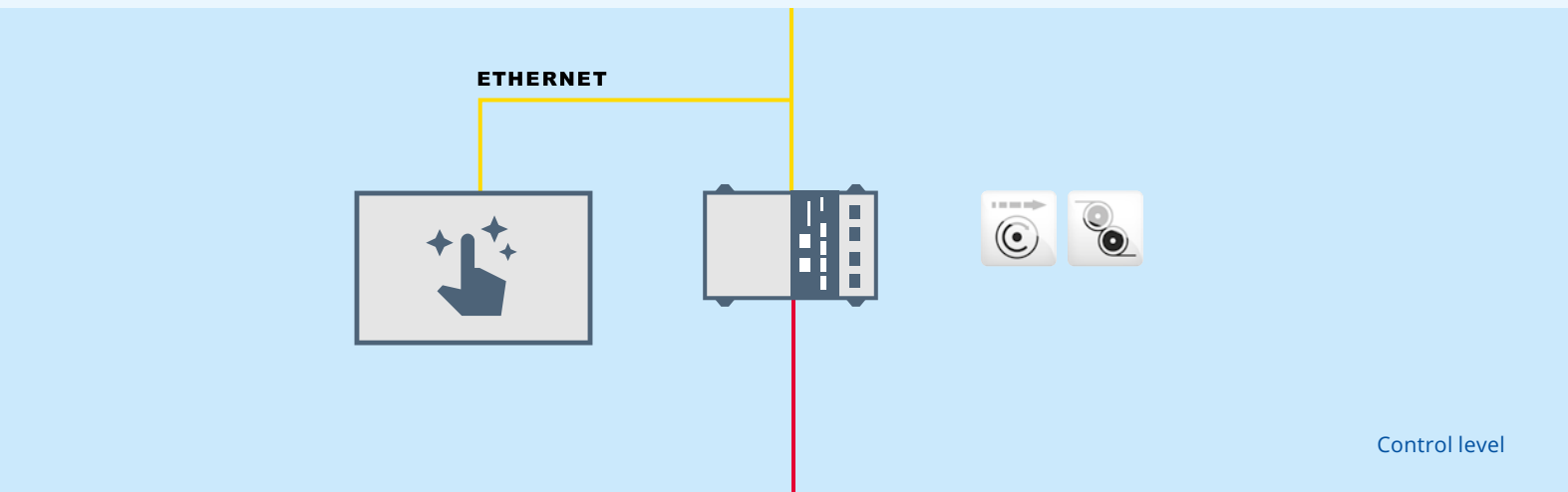
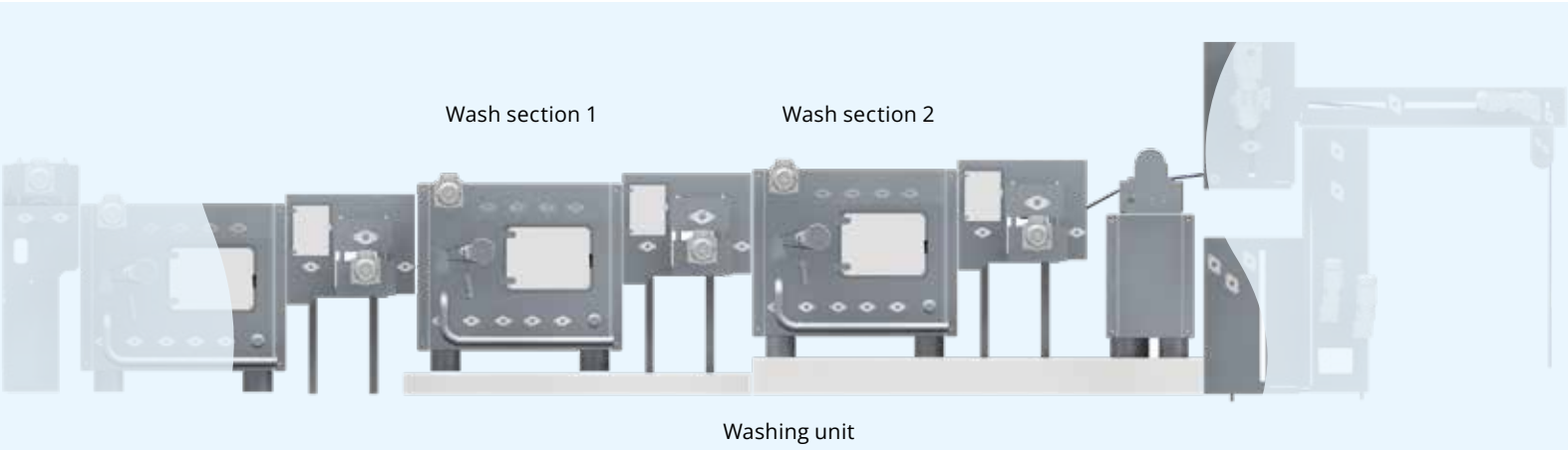
- **Flexible and modular machine design** due to distributed, synchronised controllers as well as optional drives and I/O cells
- **Easy engineering** due to verified application templates for the traversing drive as well as the drawing and thread transport systems
- **Cost-efficient temperature control** with short set-up times and, thanks to fewer cycles, self-adapting due to integrated temperature controllers in the I/O modules
- **Best yarn quality** due to highly precise control of tensile force
- **Innovative visualisation** with database link for purposes of quality control and documentation





Textile
finishing:
**Always a
clean solution**

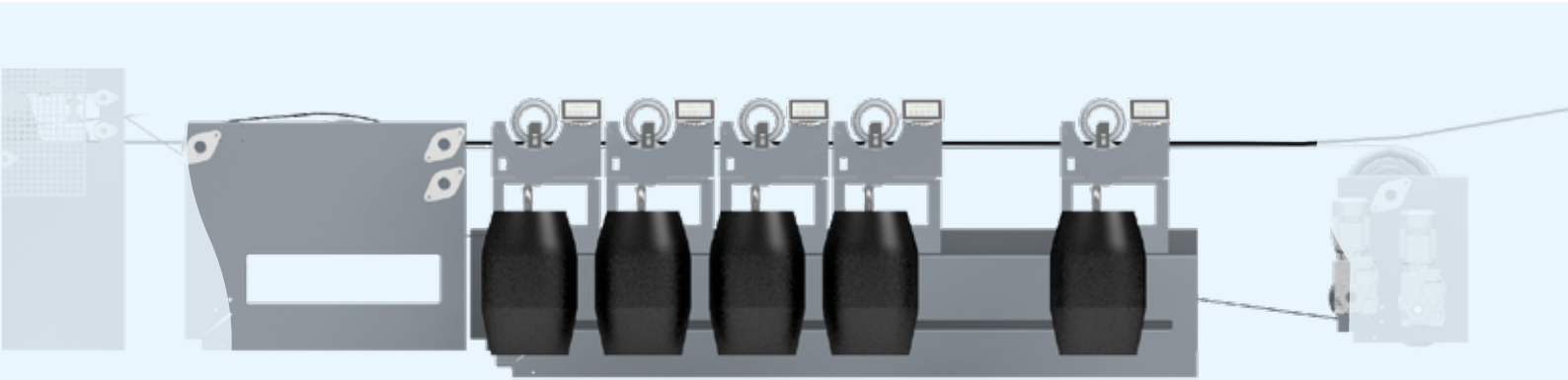
- **Web visualization** with role-based display and user interface for intuitive use after a short training period
- **Space-saving** due to the use of a servo inverter with double axis modules
- **Cost-saving** due to motors running parallel on one axis
- An **I/O system with temperature sensor** card for temperature control inside the PLC; this makes additional hardware controllers superfluous
- **Remote maintenance** with transparent access to EtherCAT nodes



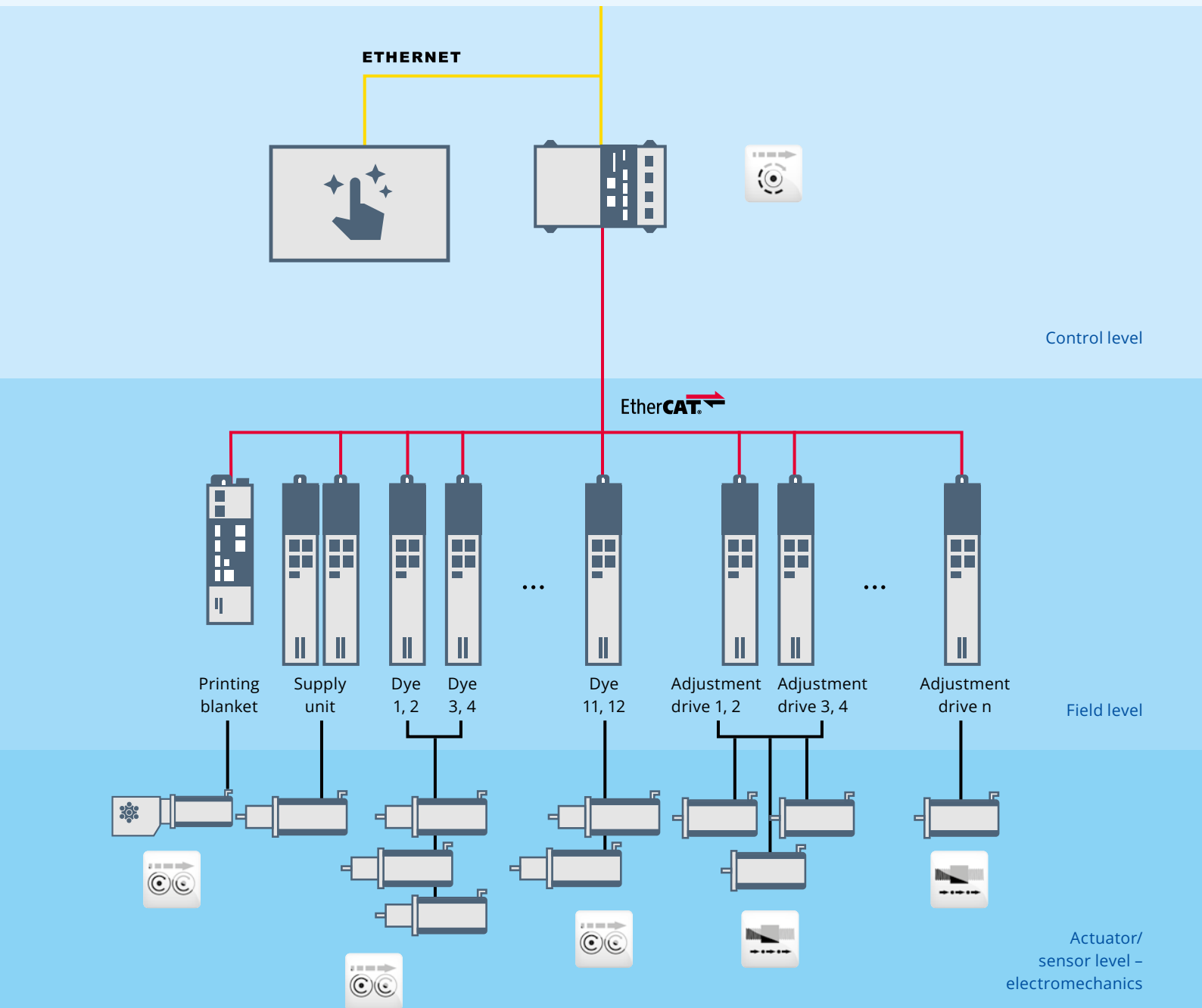
A photograph of a textile finishing plant. In the foreground, a worker in a light blue shirt is leaning over a series of large, horizontal rollers. In the background, a large roll of white fabric with a repeating blue floral pattern is being processed. The scene is lit with industrial overhead lights.

Textile finishing: For high quality patterns

- **Easy engineering** due to uniform software environment for visualization, printing roller drives and variable speed drives
- **Support of modular machine concepts** based on a configuration for a maximum number of colors with optional nodes
- **High printing precision** due to synchronized servo axes
- **High plant availability** due to possibility of using an alternative printing axis in the event of a printing unit fault or failure



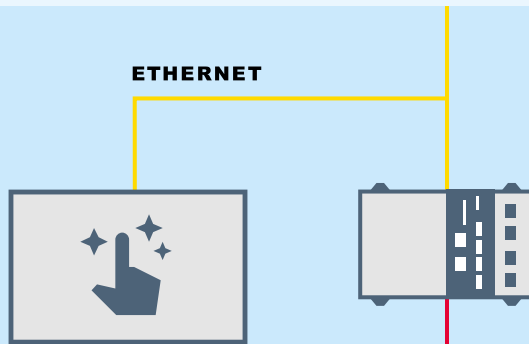
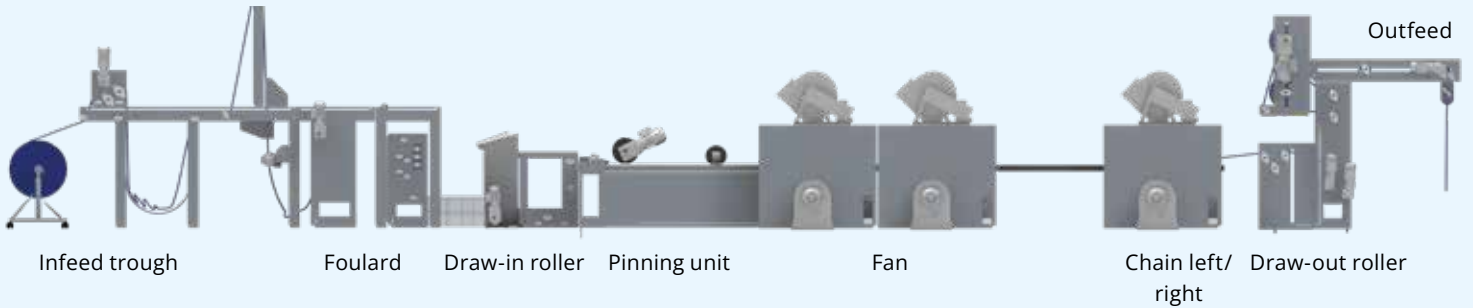
Printing unit



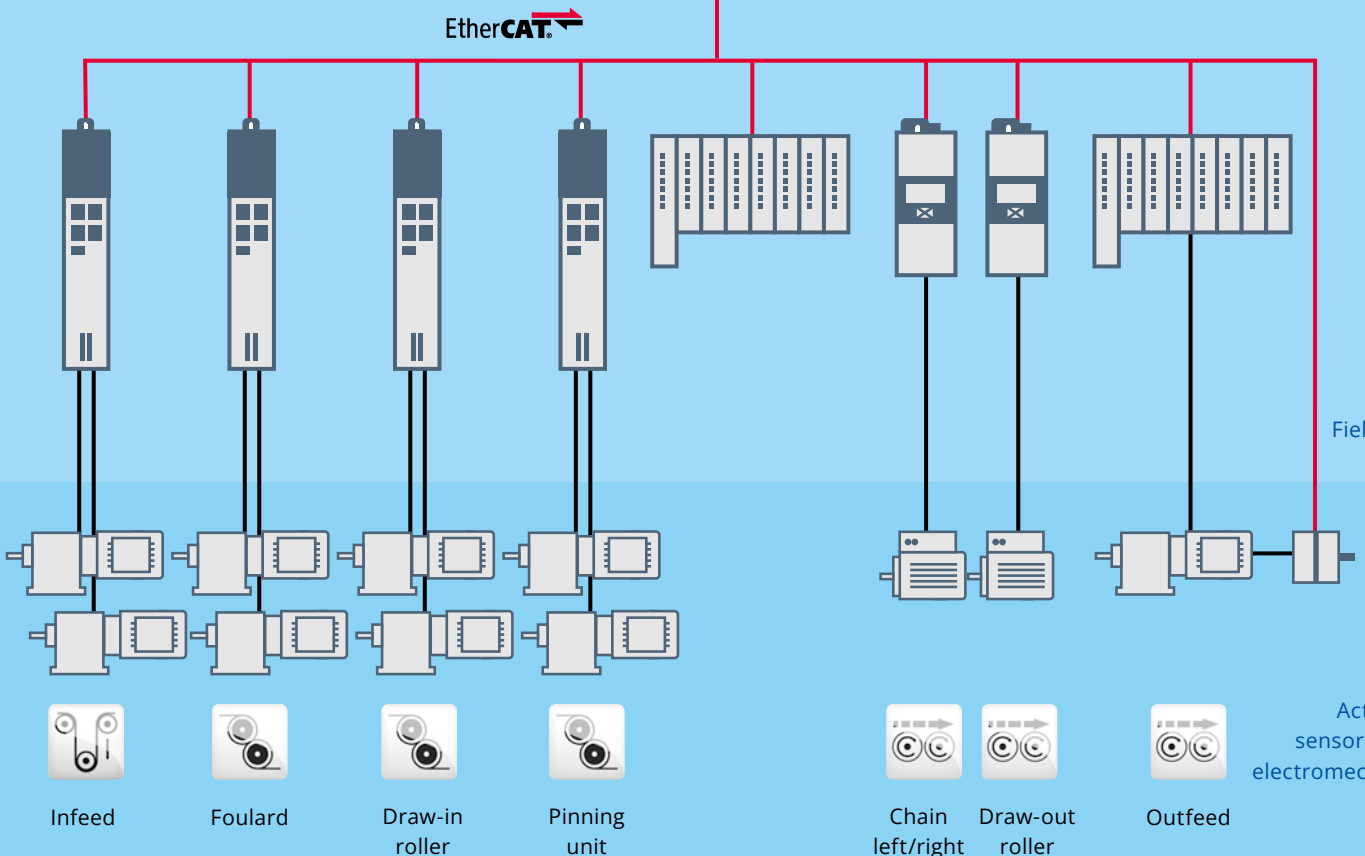


Textile
finishing:
**Easy solutions
for complex
applications**

- **Motion control** in central motion controller with integrated web server
- **Easy parameterization** of winding, synchronization and web tension functions in Lenze FAST software engineering modules
- **Simple scalability** of performance in the drive functions by selecting servo or frequency inverters with the same interfaces as required



Control level



Digital Services

Added value
with perspective
for OEMs and
end users

For end customers, the supervision of the operating phase of a machine by the OEM adds additional value. In this context, digital services offer the possibility of tapping into new turnover potential and strengthening profitability in core service activities.

Together with us, you will develop your tailored digital journey and define steps for your digital offerings which are feasible and realistic for you – today, tomorrow, and in future. With our digital product and solution portfolio, we support you in every phase of this endeavour.



TODAY

What is happening?

- Connection of all machines to a central cloud infrastructure without special IoT know-how
- Remote maintenance and condition monitoring from any mobile device with a web browser
- Autonomous creation of dashboards with the aid of widgets at the click of a mouse

Benefits for OEMs

- Secure and transparent access to remote maintenance
- Reduction in commissioning costs
- Reduce support costs through efficient remote maintenance
- Retrospective fault analysis

Benefits for end users

- Secure and transparent access to remote maintenance
- Higher machine availability through faster fault elimination by the OEM

TOMORROW

What will happen?

Optimization of availability, throughput, and production yield with the aid of KPIs (OEE, MTBF) in real-time.

Benefits for OEMs

- New turnover potential via digital added value services related to one's own machines
- Record of the contractually assured machine availability
- Optimize of machines based on recorded data

Benefits for end users

- Anticipate failures to reduce unplanned downtimes
- Display real-time and historical OEE data
- Utilize the entire machine outfit more efficiently
- Performance analysis within a multipoint line configuration

IN THE FUTURE

What comes next?

Increased availability and process quality via predictive analytics.

Benefits for OEMs/ end users

- Higher OEE
- Better product and process quality
- Plannable maintenance periods
- Longer maintenance intervals and lower maintenance costs
- Foray into new business models
 - Pay per use
 - Performance-based
 - Contracting
 - And many more

Lenze FAST
Efficient
software
engineering



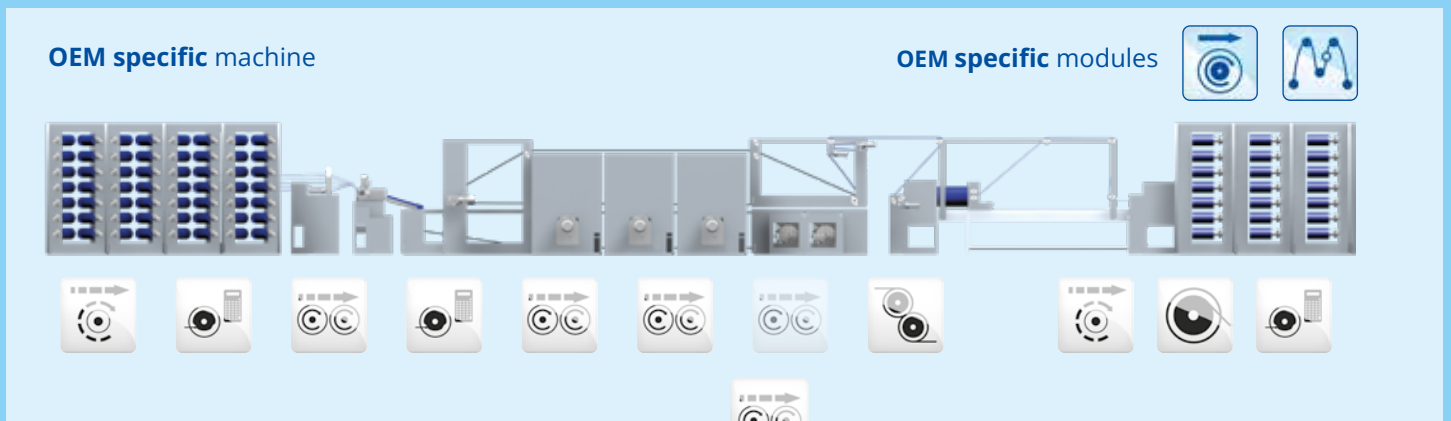
Lenze FAST is based on the experience from several thousand realized applications.

The engineering process is becoming increasingly digital. Whether it is higher machine flexibility which allows for batch sizes of 1 or improved productivity: Machine software is increasingly becoming the focus.

For better software quality, the technology modules can easily be reused. They can be used directly by the OEM or form the basis for the development of custom modules, thus allowing a machine to be programmed efficiently. A structured programming layout is realized via the Application Template.

Our modular software system, the Lenze FAST Application Software Toolbox, incorporates the experience from several thousand realised applications. Ready-made and tested technology modules reduce development time for technology-specific basic functions, thereby simplifying the implementation of machine functions.

FAST Application Template



FAST Technology Modules



EASY Engineering Tools

The right software tool for every task

Do you want to plan, build or commission machines?

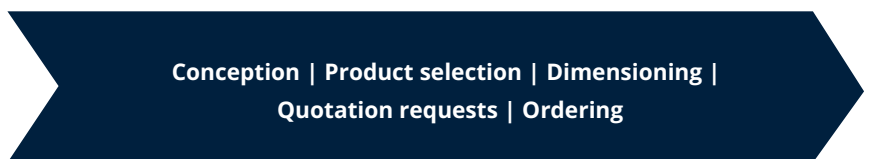
Adjust existing machines or run diagnostics?
Regardless of whether you require simple applications or maximum precision and dynamics:
You can choose the right tools for you and perform your engineering more rapidly and easily.



EASY System Designer
Plan automation solutions



Drive Solution Designer
Design drive solutions





Drafting
concepts

Manufacturing
machines

Ensuring
productivity



PLC Designer
Program the controller



EASY UI Designer
Machine visualization



EASY Starter
Parameterization and operation

Parameterization | Configuration | Programming |
Debugging | Setup | Interface design

Commissioning |
Diagnostics |
Troubleshooting

Engineering Services

Together we develop solutions

Concept Engineering

The basis for the best solution for your machine task is that we first learn to understand your processes and your organization.

Building on this, we demonstrate your engineers how your machines can be developed efficiently and fully utilizing all possibilities with our automation solutions.

Project Engineering

The use of a Lenze automation system provides you with long-term advantages.

Integrated project management supports smooth workflows when creating your

- functional concepts,
- hardware concepts and
- engineering concepts.



**Concept
Engineering**



**Project
Engineering**

We support you throughout all phases of the engineering process.

With scalable hardware, modular software and brainware.

Project Realization

We offer you a complete solution by also assuming responsibility for the electrical design and the commissioning of the system.

Technical Training

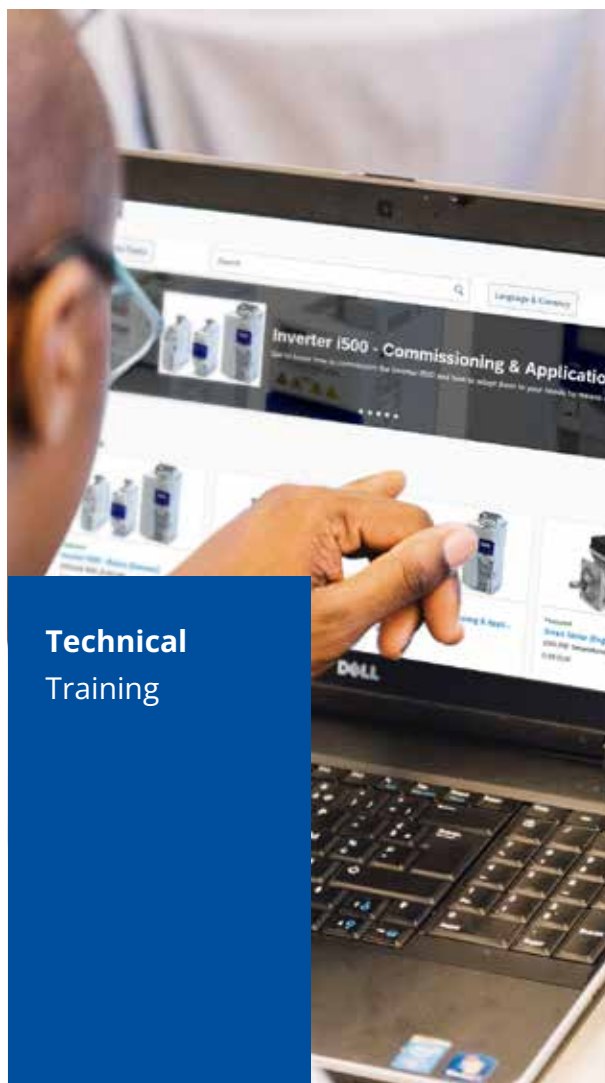
With an individualized training concept, we prepare you for the planning, implementation, and operation of your machine.

Our training courses are application- and practice-oriented and enable you to immediately integrate what you have learned into your day-to-day work.

To offer you flexibility and time savings, our offerings include on-site training programs, online training and video tutorials.



Project Realization



Technical Training



Worldwide Services

You can rely on every aspect of our high quality standards.

Our service is designed to ensure the reliability of your machine and to guarantee its availability.

With proactive solutions that rule out any contingencies, as far as possible and structured procedures, the fast and smooth restoration of the machines' functions in an emergency is ensured.

A large number of our services can be used online at any time. You can of course also get personal support and advice from our specialists.



24/7 Lenze expert helpline

Online support

You can directly request support and repairs for specific Lenze products or order spare parts and call up technical data and documentation.

Simply enter the material number or scan the type plate with our integrated scan function. All support information is immediately available to you at a glance.

Replacement requirement

Are you using Lenze equipment and need to replace a complete device or some parts? We send you a corresponding quote quickly with our online service.

Original repairs from Lenze

In some cases, repairing a Lenze drive instead of replacing it could be a better alternative in terms of quality and cost-savings. This helps you minimize costly downtimes in cases of emergency and means that you don't have to keep large stocks of spare parts.

Maintenance with a plan

To ensure maximum machine availability, our maintenance package includes additional services that proactively safeguard your operations. We analyze your requirements together and customize your plan based on our many years of expertise in this field.



Original repair

Lenze

engineered to win

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