

## Leading Software Solutions for Wire Harness Production



4Wire CAO

Cutting Area Optimization

# 4Wire CAO

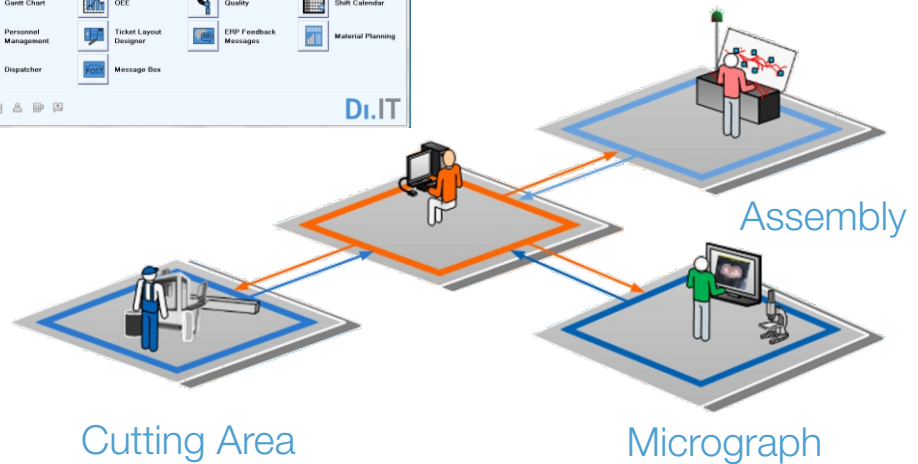
## Next Generation Cutting Control

### 4Wire CAO

#### Experience over 30 years

4Wire CAO is the most powerful and comprehensive cutting MES to date. To meet the challenges of Industry 4.0 the system, that is operating successfully at major international producers, has been reissued to make it usable for a larger group of customers.

4Wire CAO is modular, scalable and in a basic version also suitable for smaller companies. As your requirements grow, the system can be expanded to control cutting centers of any size. Whether you control 2 or 100 machines, CAO ensures efficiency, quality assurance, documentation and traceability of your production.



### Basic Version

The basic version already includes the most important 4Wire CAO functions. A single platform allows you to integrate and centrally control machines from different manufacturers, like Komax, Schleuniger, Artos, ShinMaywa, Schäfer, Yazaki, etc. in the cutting area.

With simple tools and interactive graphics you create your own production database, so that order and article data along with process-specific parameters can be transferred directly into the connected machines.

All machines are integrated by means of a standardized operator interface with order list and process control to assure best quality and high productivity to our customers.

### Master Data

Purchased and produced parts are centrally administered in the master data. With Excel you can insert all your available data easily. These data, along with order data and crimping standards, are available to all machines and will be automatically transferred in the shop floor machines.

### Order Management

The overview gives you an overall picture of orders and current states of processing. From here, you can control the production, access quality and process data. Finished orders can be retrieved from order history.

In the optimization view, built-in planning tools help you to find a good distribution and sequencing of your orders. With drag-and-drop you move them onto suitable machines, checking automatically for compliance with the machine configuration.

### Machines

Here, you configure your machines with graphical tools, specify capabilities and resources. The setup parameters can be entered as default values or for each machine.

### Personnel Management

Using roles, you define which employees may exercise which functions in the system.

### Tools Management

With the inventory numbers of crimp tools and seal applicators, you decide which tools are the proper ones for specific terminals and seals. During setup, every tool will be identified and verified by the inventory number.

The automatic update of tool beat counters gives you a clear picture of your tools state of maintenance.

### Crimping Standards

Crimp specifications are important process parameters that you lay down as standard, valid throughout production. They are transferred electronically to the machine preventing errors and mistakes. The centralization of this process expertise gives you added flexibility, reduces training time and lays the ground for consistent quality standards.

### Log Data

The production process is continuously recorded by evaluating the machine feedback. Longer downtimes have to be justified by choosing a reason for the downtime from a catalogue. The analysis of these data provides you with the information needed to continuously improve your production.

# The Extensions (Option)

4Wire CAO grows along with your needs. It meets the highest requirements in terms of quality assurance, order and system control, production documentation, reporting and traceability.

## Integration of Assembly Area

4Wire CAO is already prepared for the integration and control of the assembly. Bench Top machines and other processes are optimally controlled by 4Wire CAO.

## Quality Module

Meet your customer's high quality requirements and integrate them into your process (VW-standard, micrograph, quality measurements). Quality measurement devices are connected online.

## Optimization

Make the best of your capacities with automatic optimization. It reduces setup cost to a minimum, makes sure that you meet order deadlines and takes account of machine features, current setup, and due dates of orders.

## Gantt Chart

Optimize your production by assessing order distribution and machine workloads with the Gantt chart.

## Electronic Kanban

Reduce your work-in-progress inventories and benefit from smooth production processes through the introduction of demand-driven Kanban production.

## OEE

Analyze your business process and discover hidden potential through the automatic calculation of the Overall Equipment Effectiveness OEE and other KPI values. Compare your plants with non-manipulable key indexes.

## Live Machine View

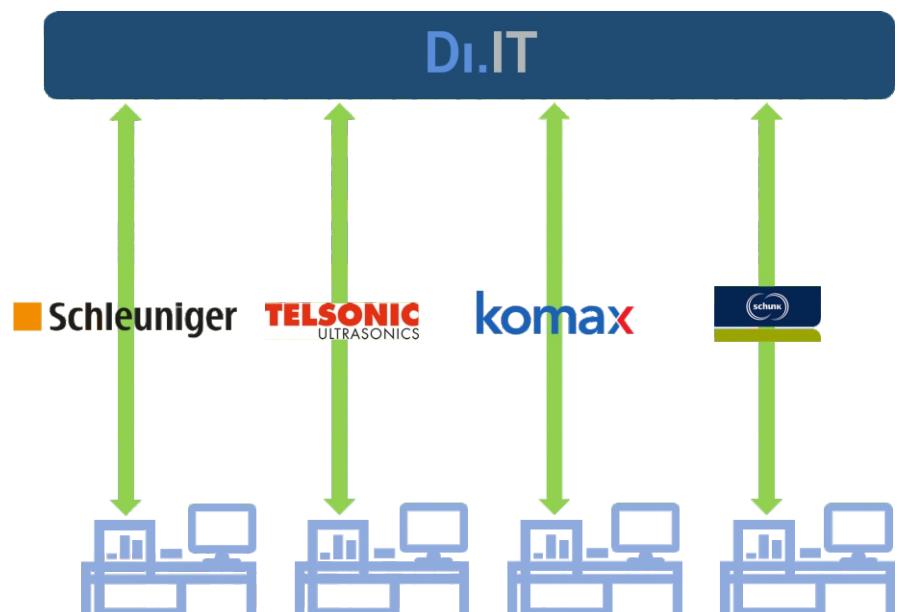
Reliable figures from ongoing production are an important management control tool. The real time machine data can be visualized on a separate monitor above each machine.

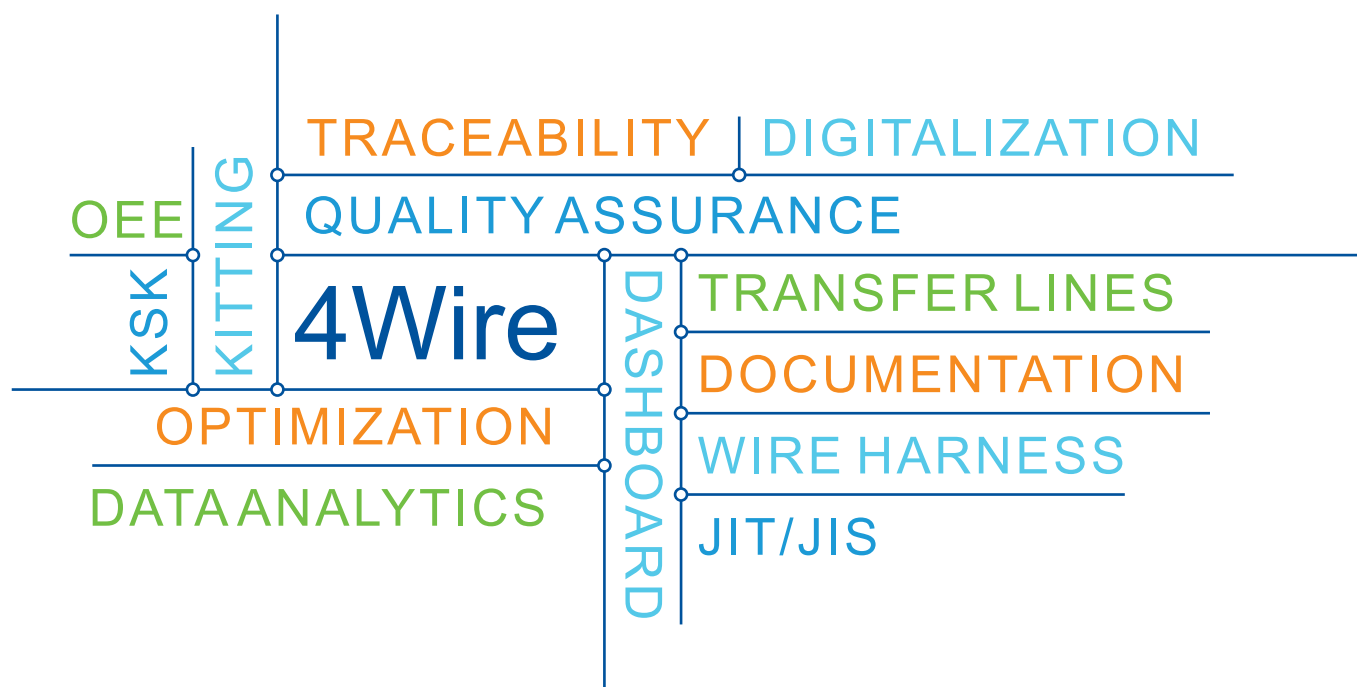
# 4Wire CAO Features

- Integration of up to 100 machines
- Standard operator interface
  - setup validation with barcodes
  - integrated quality processes
  - production data acquisition
  - standardized process control
- Data administration
  - leadsets, seals, terminals, wires
  - machine configuration
  - crimp data
  - tool relations for terminals and seals
- Planning and scheduling
  - planning tools for order distribution and sequencing
  - automatic check of compatibility with machine features
- Process documentation
  - recording of inventory and serial numbers of tools and materials
  - measurements
  - tool beat counters
  - log data
- SAP interface and standard ERP interface
- Ticket layouter
- Material requirements
- Dispatcher module for operator dialogue with logistic people

# 4Wire CAO Benefits

- Significantly improved quality rate
- Higher machine utilization
- Efficient processes
- Considerable savings in time and material
- Full process documentation and traceability
- Full transparency
- Significantly reduced inventory (WIP)
- All languages simultaneously usable
- Micrograph integration
- Worldwide supported including 24/7 support
- Complete traceability with HU (handling units, serial numbers)
- Covers P1 and P2 - cutting and pre-assembly
- Seamless integration in your IT-landscape





## Complementary System

## Locations

### 4Wire Px

The production areas after the cutting area are moving more and more into focus. The manufacturers of cable harnesses need more efficiency, improved quality assurance and more transparency in these areas.

4Wire Px delivers all of this. With Px, complex products, right up to complete cable sets and the associated production plans, can be described. 4Wire Px controls production and documents all work steps. Processing standards ensure that uniform procedures and parameters are used. Quality and test plans ensure a high-quality standard.

When 4Wire Px is used together with 4Wire CAO, the two systems together enable complete documentation of production and comprehensive traceability. Px is extremely flexible and able to control the most varied of production processes such as crimping, twisting, welding or injection molding.

4Wire Px uses the most modern technologies. Through the consistent use of APIs, Px is very easy to integrate into existing system environments. The user interface is HTML-based, which means that the customer can use simple and inexpensive end devices. The system can be operated both "on premise" and in the cloud.

### Head Office Krailling/Munich

DiIT GmbH  
Justus-von-Liebig-Ring 11a  
D-82152 Krailling near Munich  
Phone +49 (0)89 - 89 32 50 - 0  
Fax +49 (0)89 - 89 32 50 - 50  
info@diit.de  
www.diit.de

### Branch Office Berlin

DiIT GmbH  
Am Borsigturm 33  
D-13507 Berlin  
Phone +49 (0)30 - 64 0996 - 35  
Fax +49 (0)30 - 64 0996 - 36  
sales@diit.de