PULSEPRO

ASYS GROUP



PULSE PRO

Smart Factory Manager

Smart Software Functions to Optimize your Production.

PULSE PRO

Smart Factory Manager

Discover the compact software solution from ASYS to optimize your production. PULSE PRO offers six software modules that will help you to control automated material flows in the shop floor, to achieve a dynamic just-in-time supply for each production step and to track all data flows.

PULSE PRO is easily operated via a cockpit and meets the highest demands for simple handling. The high quality usability is based on the tasks of the operators. Even with complex contents and functions, the users find their way to their goal quickly and easily.

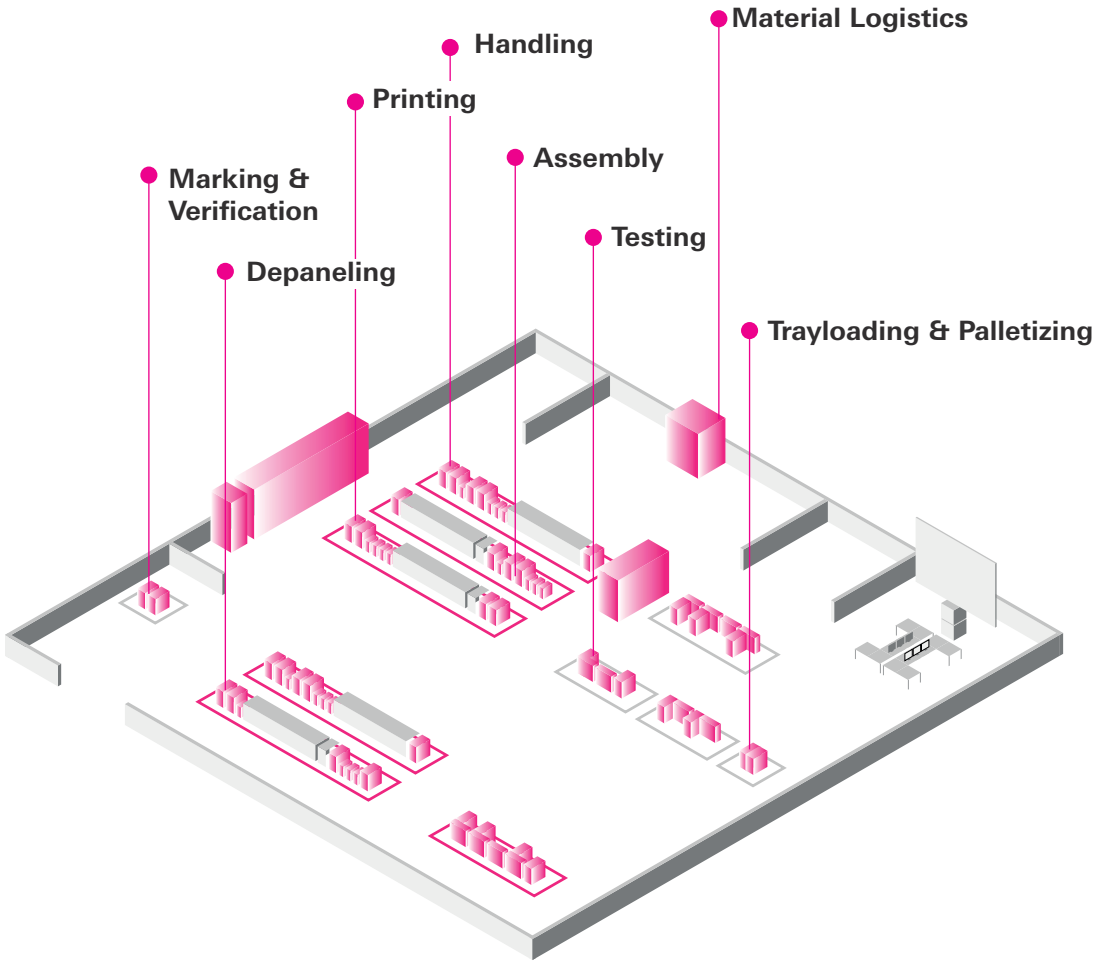
Software Modules

Observe & Control	Performance of the entire Shop Floor	10 – 13
Material	Automate, Control, Trace all Material Flows & Types	14 – 17
Plan & Execute	Precise Order Planning of the entire Shop Floor	18 – 21
Product Change	Stop Losing Time on Product Changeover	22 – 25
Program Preparation	Offline Programming of Machine	26 – 29
Factory Connect	Import & Export of Data	30 – 33

We offer with our machines over 75% of the entire Smart Factory.

Smart Factory

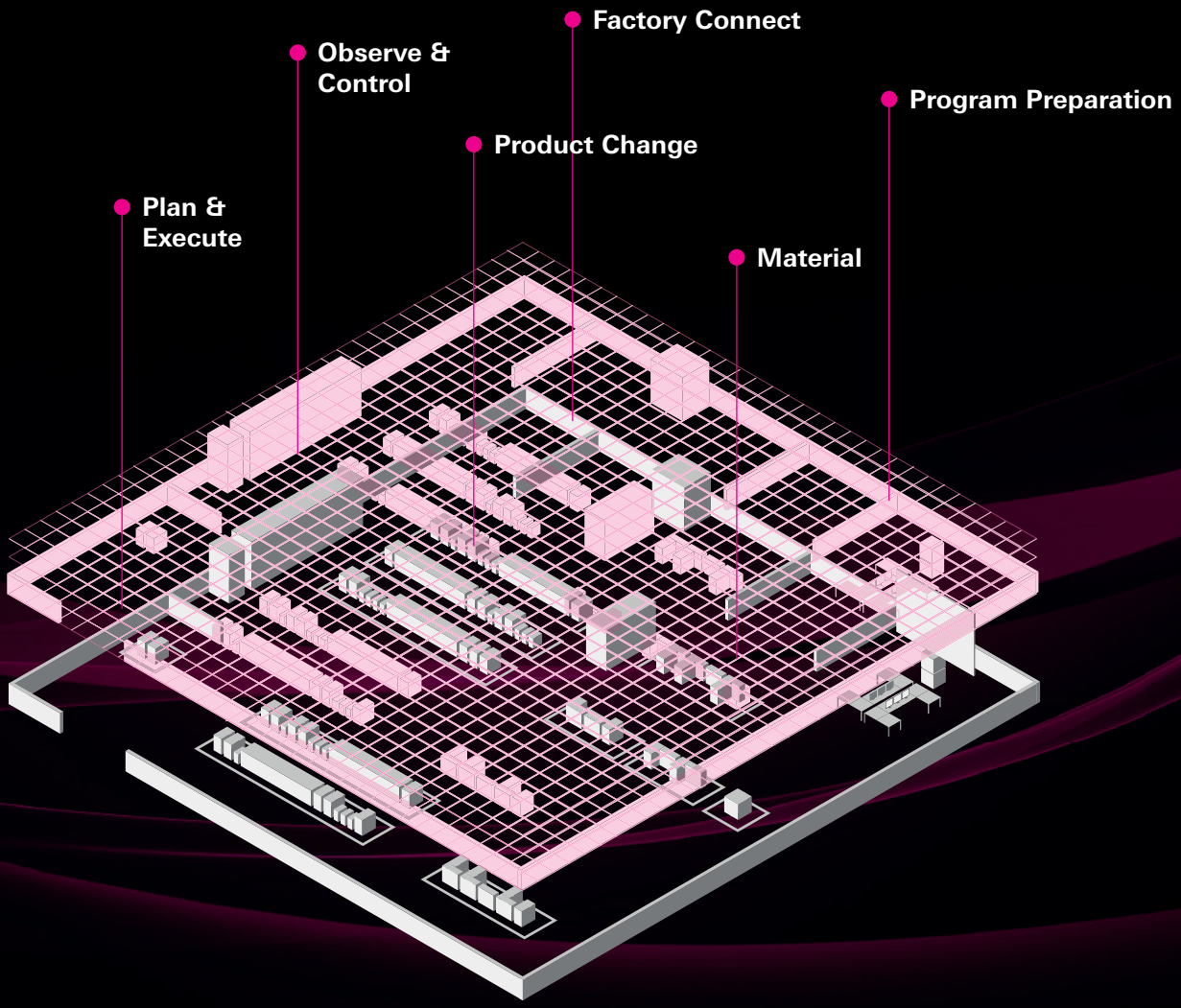
Machine Layer



PULSE PRO Software solutions for the entire Smart Factory.

Smart Factory

Software Layer



Advantages at a Glance

All functions in a uniform look & feel

All software functionalities in an organized and modular structure

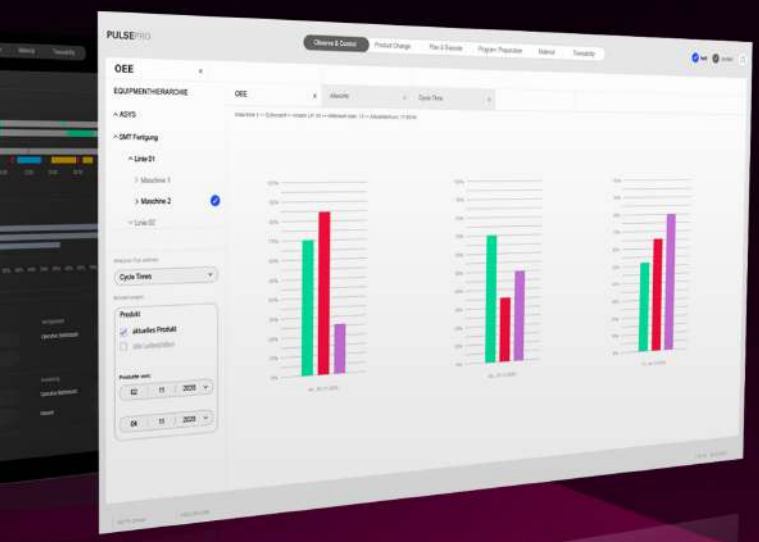


Easier control and visualization of automated material flows on the entire shopfloor

Operator has the production in sight and is able to achieve an optimum of productivity

Various functions with solutions on all layers

Closing the gap between Shopfloor and MES/ERP

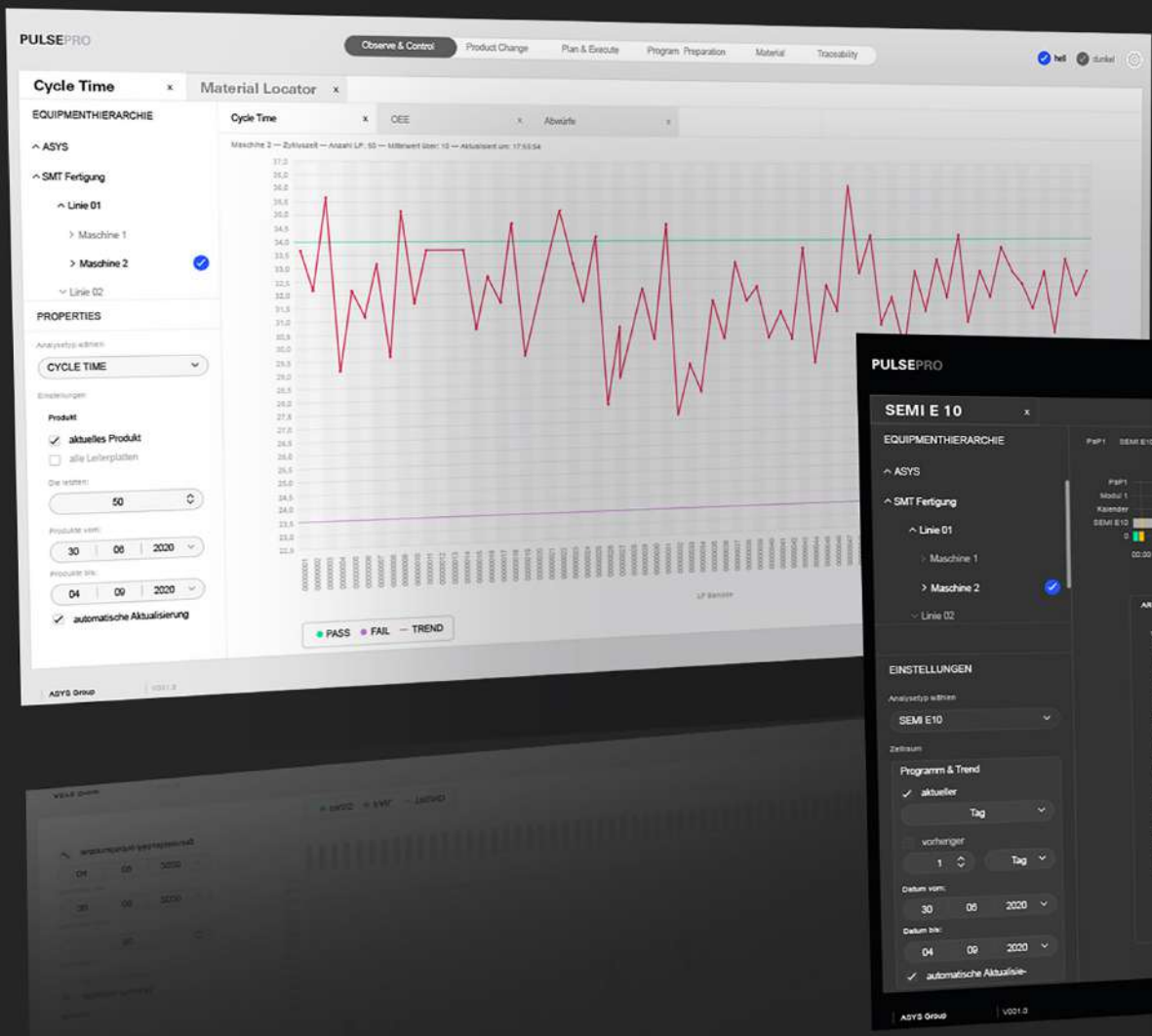


PULSEPRO

Modules & Functions

Modules	Description	Functions	Function Area		
			Machine	Line	Factory
Observe & Control	Performance overview of the entire shopfloor	Shopfloor Statistics	●	●	●
		Smart Alerts	●	●	●
		Monitoring Cam	●	●	●
		Line Observer	●	●	●
		Dashboard Material	●	●	●
		Dashboard Line Materialflow	●	●	●
Product Change	Stop losing time on product changeover	Product Change		●	
		Product Change Lite		●	
Plan & Execute	Precise order planning of the entire shopfloor	Order Control		●	●
		Order Planner		●	●
		Manual Workstation		●	●
		Pre Setup Area		●	●
Program Preparation	Offline programming of machine	INSIGNUM Programming	●		
		DIVISIO Programming	●		
		SERIO Programming	●		

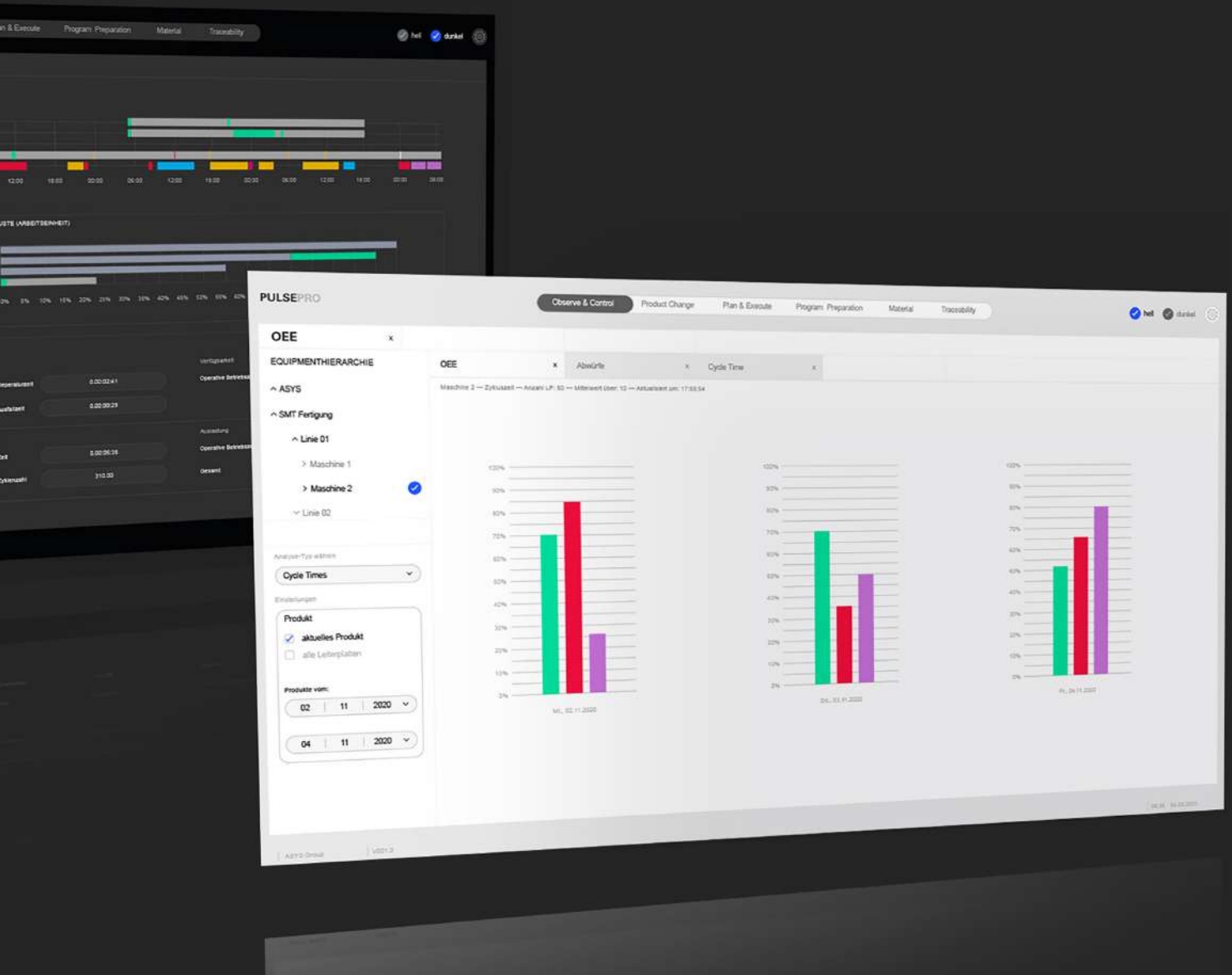
Modules	Description	Functions	Function Area		
			Machine	Line	Factory
Material	Automate, control, trace all material flows & types	Material Locator	●	●	●
		Component Manager	●	●	●
		Advanced Component M.		●	●
		Carrier Manager	●	●	●
		MSL Manager	●	●	●
		Mobile Robot Manager			●
		Fleet Manager OMRON			●
Factory Connect	Import & export of data	Sync Factory Calendar			●
		Import Order Data			●
		Import Order Sequence			●
		Import Material Data			●
		Sync SAP – Material			●
		CFX – Connect Smart Alerts	●	●	●
		ASYS Socket Interface	●		


PULSEPRO
Observe & Control
Product Change
Plan & Execute
Program Preparation
Material
Traceability
Cycle Time
Material Locator
EQUIPMENTHIERARCHIE
ASYS
SMT Fertigung
Linie 01
Maschine 1
Maschine 2
Linie 02
PROPERTIES
CYCLE TIME
aktuelles Produkt
alle Leiterplatten
50
automatische Aktualisierung
OEE
Abwürfe
PASS
FAIL
TREND
SEMI E 10
EINSTELLUNGEN
SEMI E10
Programm & Trend
aktueller
Tag
vorheriger
automatische Aktualisie-
ARBEITSEINHEITZUSTÄNDE: ANTEILE
70%
43%
55%
5,4%
15,6%
ASYS Group

Software Module

Observe & Control

Performance of the
entire Shopfloor



Software Module

Observe & Control



Observe & Control
The PULSE PRO module „Observe & Control“ offers a variety of monitoring possibilities to keep the overview of all connected machines. The operator always knows what is going on in every situation. The data is put into relation and is summarized according to standardized specifications. The tool maps the performance of the entire shop floor. Interrelationships become clearer, bottlenecks and downtimes are clearly visualized and can be effectively addressed or even avoided with foresight. Always following the goal of keeping production running and increasing productivity.

Module Highlights

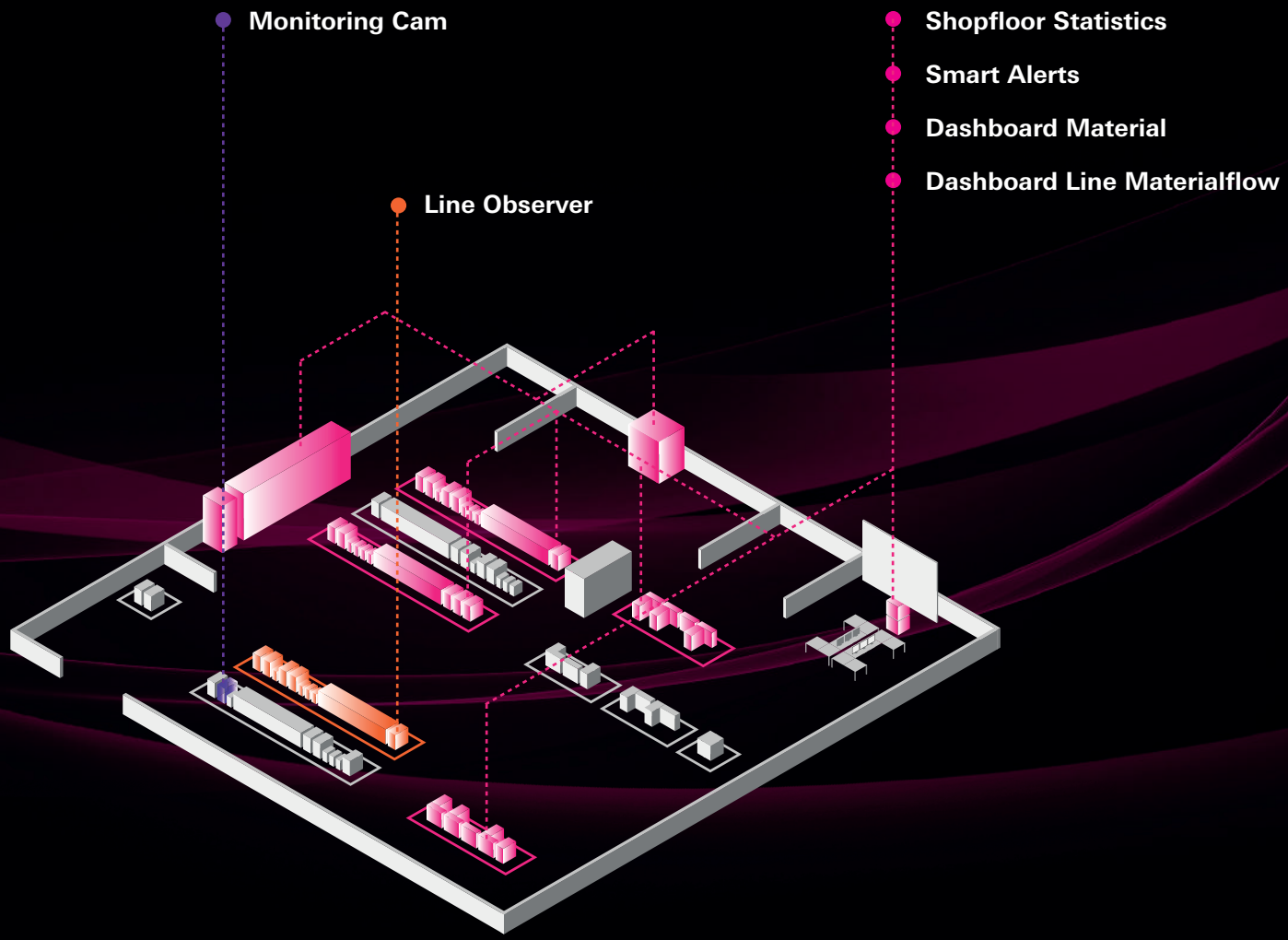
Monitoring of the entire electronics production across all machines / lines

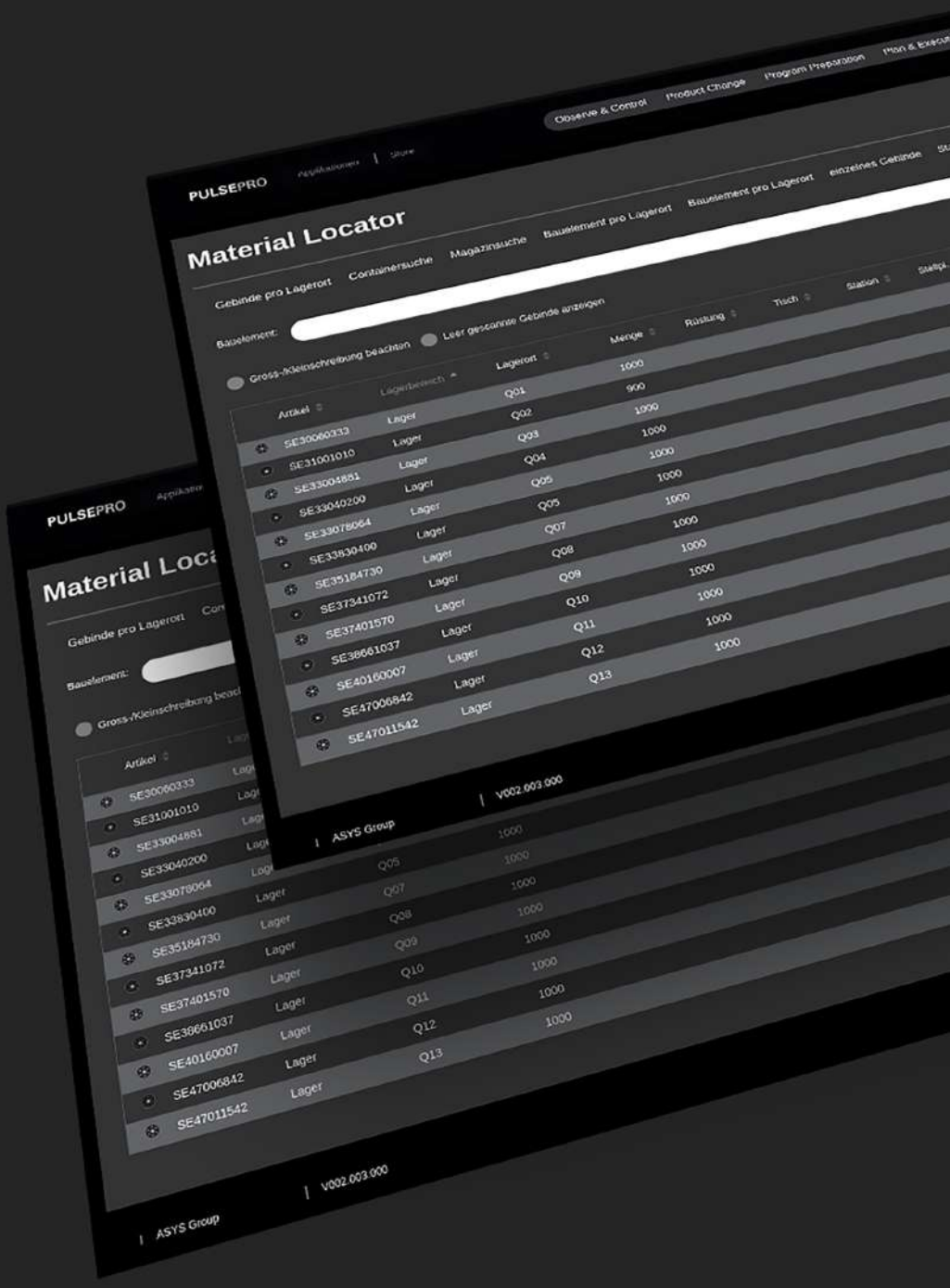
Acquisition of complete machine / process data

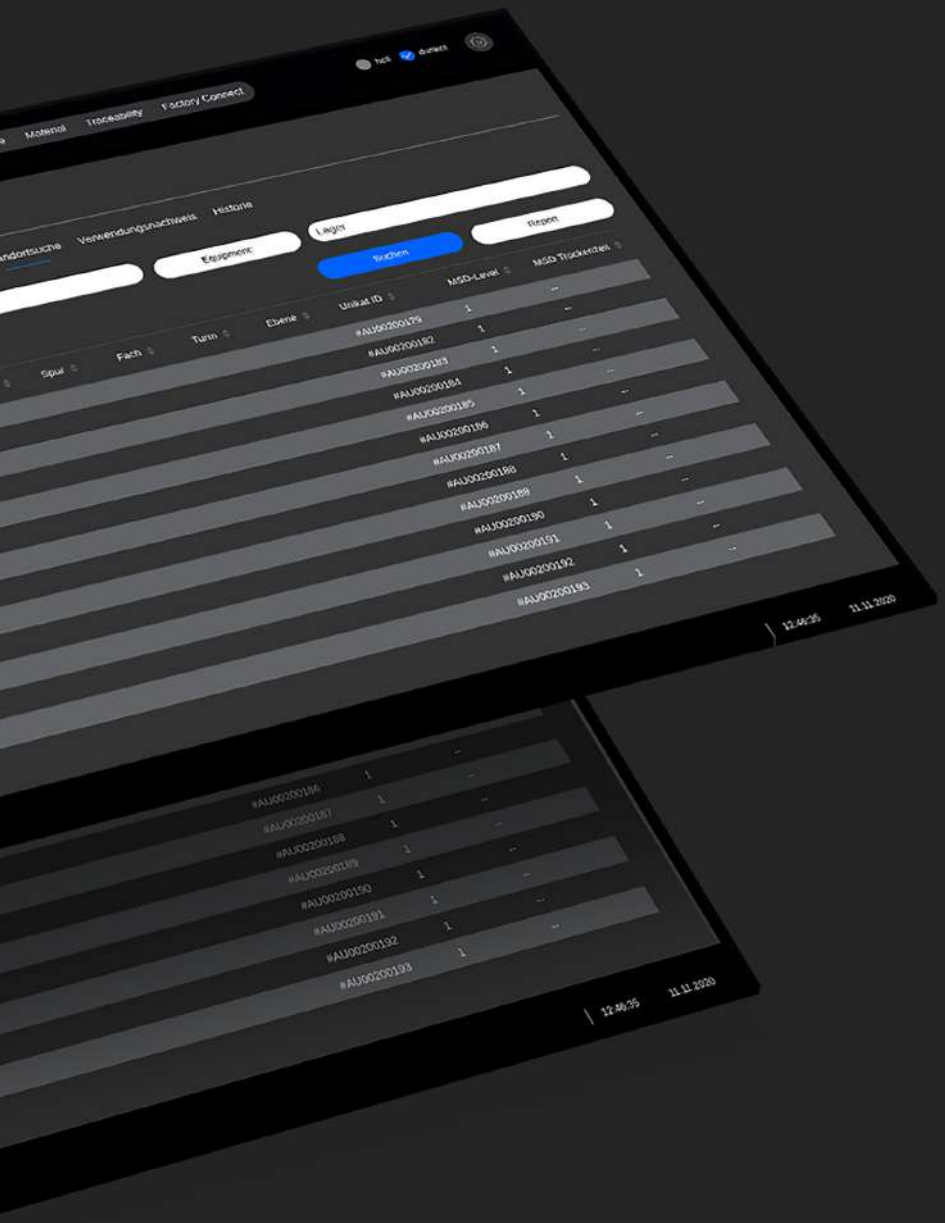
Increase of transparency, productivity and quality

Cost reduction through support in process optimization

Functions


Monitoring Cam
Line Observer
Shopfloor Statistics
Smart Alerts
Dashboard Material
Dashboard Line Materialflow
Machine Layer
Line Layer
Factory Layer


PULSEPRO
Material Locator
Observe & Control
Product Change
Program Preparation
Gebinde pro Lagerort
Containersuche
Magazinsuche
Bauelement pro Lagerort
Bauelement pro Lagerort
einzelnes Gebinde
Bauelement:
Gross-/Kleinschreibung beachten
Leer gesonnte Gebinde anzeigen
Artikel
Lagerbereich
Lagerort
Menge
Rüstung
Tisch
Station
SE30060333 Lager Q01 1000
SE31001010 Lager Q02 900
SE33004881 Lager Q03 1000
SE33040200 Lager Q04 1000
SE33078064 Lager Q05 1000
SE33830400 Lager Q05 1000
SE35184730 Lager Q07 1000
SE37341072 Lager Q08 1000
SE37401570 Lager Q09 1000
SE38661037 Lager Q10 1000
SE40160007 Lager Q11 1000
SE47006842 Lager Q12 1000
SE47011542 Lager Q13
ASYS Group
V002.003.000



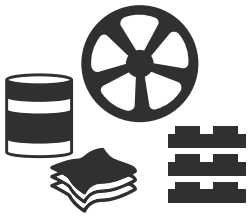
Software Module

Material

Automate, control, trace all material flows & types

Software Module

Material



Material
The quantities and states of all materials on the entire shopfloor are clearly documented in the PULSE PRO module „Material“. All component reels, trays and PCBs are managed on the basis of Unique ID (UID) and the replenishment of material is controlled autonomously, which reduces the operator’s workload. Furthermore, the floor life time of moisture-sensitive components is monitored. Based on the order planning, full or empty magazines are autonomously controlled within the entire shopfloor between lines and storage locations. Therefore all modules are integrated and connected for autonomous transport.

Module Highlights

Overview of quantities and states of all materials in the entire shopfloor

Autonomous magazine control and material replenishment for components and printed

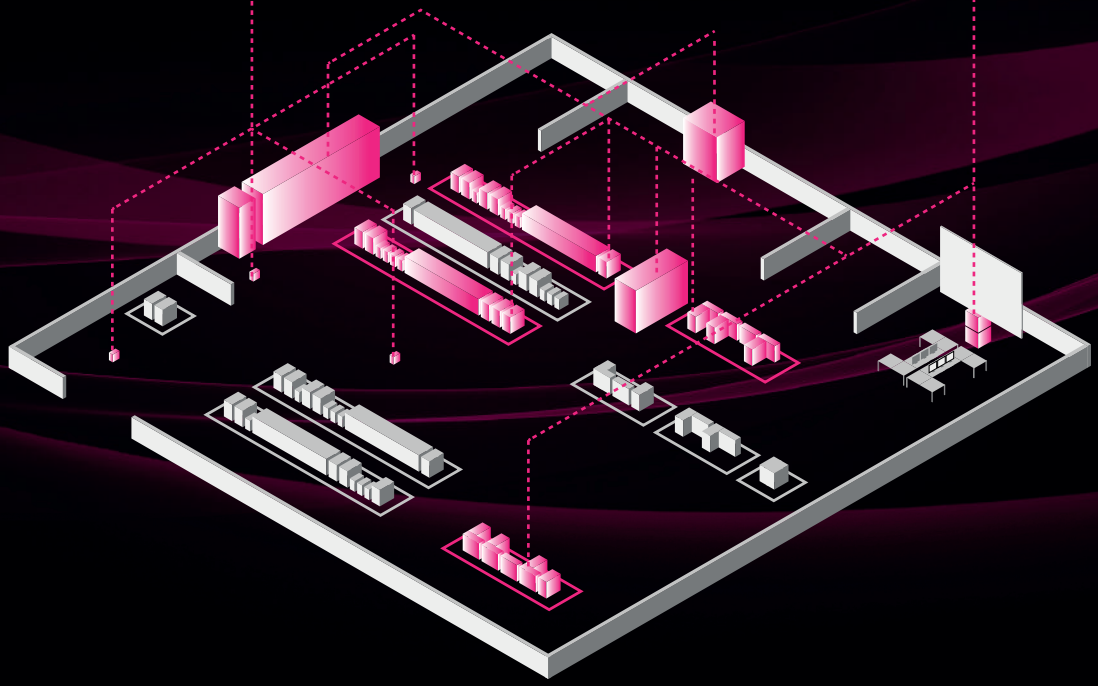
Monitoring the floor life time of moisture-sensitive components

Integration and connection of all modules for autonomous transport

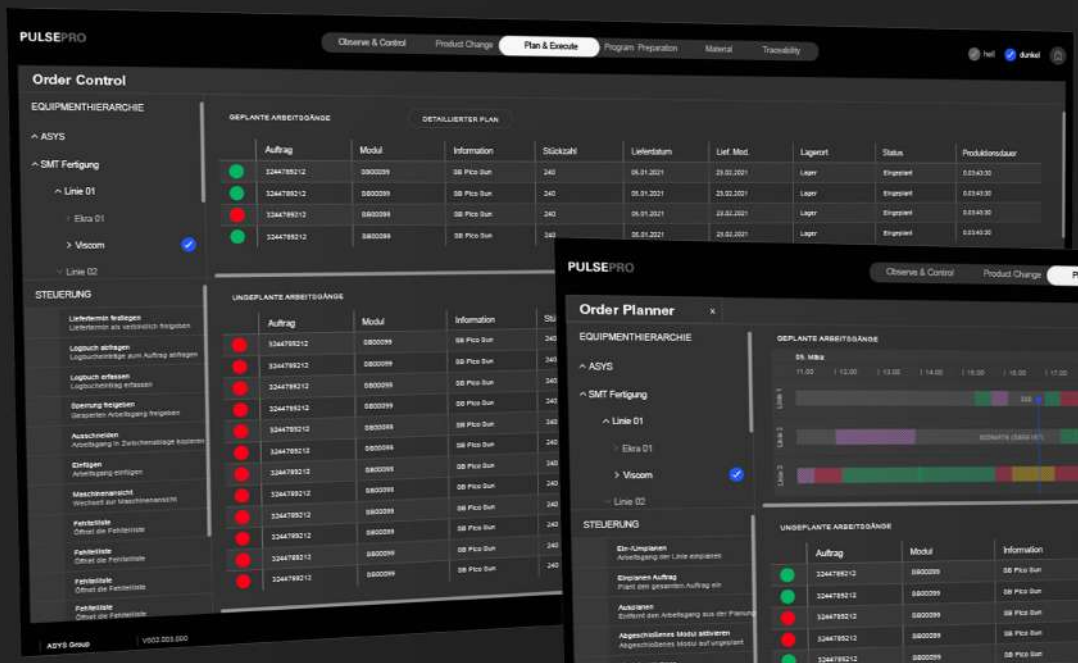
Functions

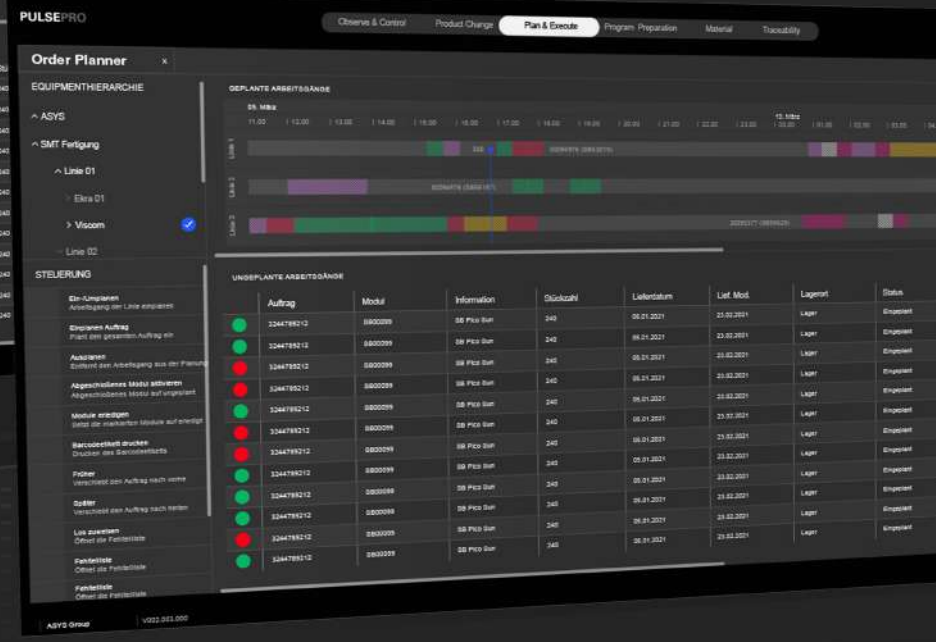
- Mobile Robot Manager
- Fleet Manager OMRON

- Material Locator
- Component Manager
- Advanced Component Manager
- Carrier Manager
- MSL Manager



Machine Layer Line Layer Factory Layer

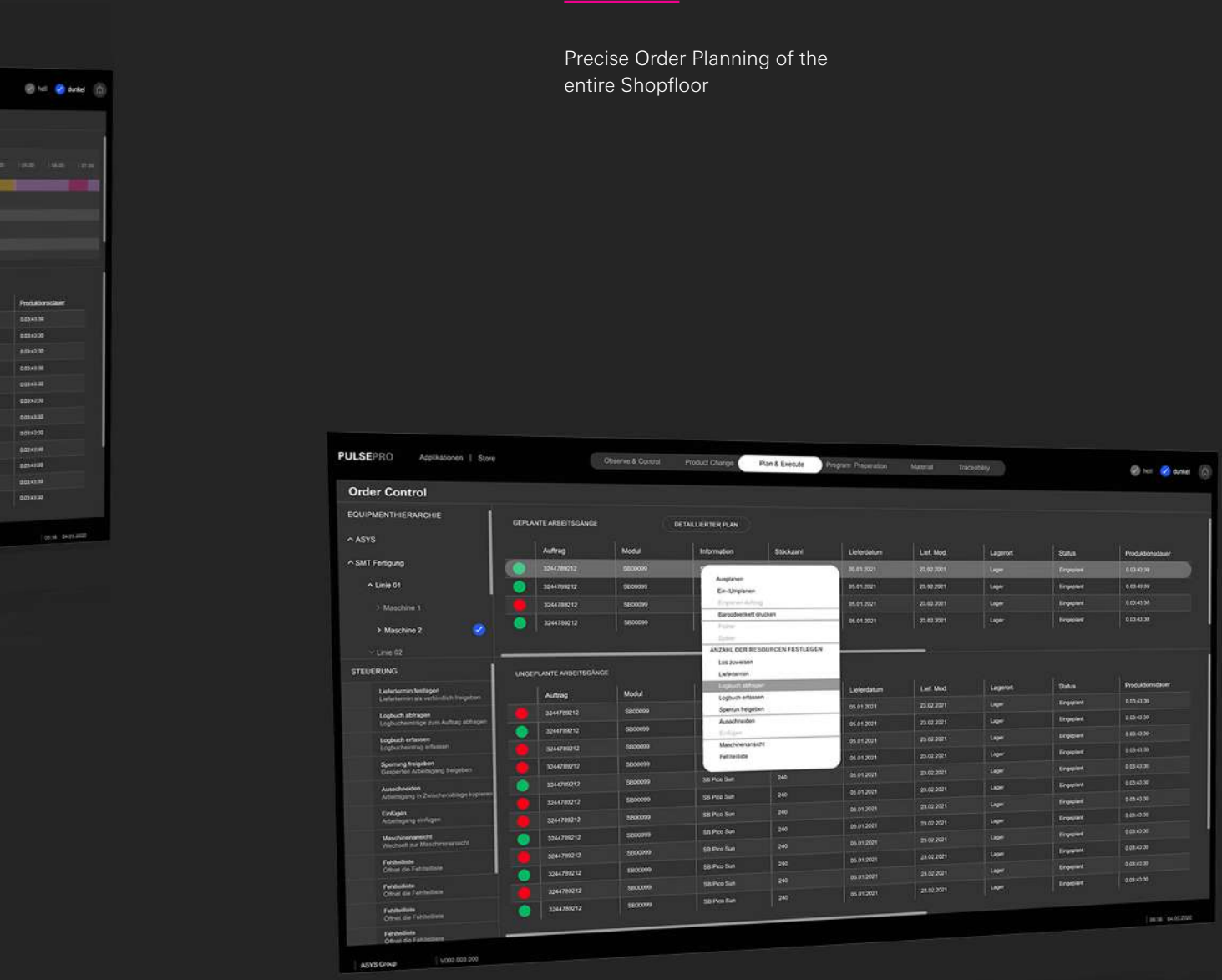

PULSEPRO
Observe & Control
Product Change
Plan & Execute
Program Preparation
Material
Traceability
Order Control
EQUIPMENTHIERARCHIE
ASYS
SMT Fertigung
Linie 01
Ekra 01
Viscom
Linie 02
STEUERUNG
GEPLANTE ARBEITSGÄNGE
DETAILLIERTER PLAN
UNGEPLANTE ARBEITSGÄNGE
Auftrag
Modul
Information
Stückzahl
Liefertatum
Lief. Mod.
Lagerort
Status
Produktionsdauer


PULSEPRO
Observe & Control
Product Change
Plan & Execute
Program Preparation
Material
Traceability
Order Planner
EQUIPMENTHIERARCHIE
ASYS
SMT Fertigung
Linie 01
Ekra 01
Viscom
Linie 02
STEUERUNG
GEPLANTE ARBEITSGÄNGE
UNGEPLANTE ARBEITSGÄNGE
Auftrag
Modul
Information
Stückzahl
Liefertatum
Lief. Mod.
Lagerort
Status

Software Module

Plan & Execute

Precise Order Planning of the
entire Shopfloor



Software Module

Plan & Execute



Plan & Execute
All orders on the entire shopfloor are precisely planned in the PULSE PRO module „Plan & Execute“. The orders and production times are clearly displayed in Gantt diagrams. The automatic planner distributes selected production orders on n-SMD lines and can be optimized manually. The result is influenced by the planner by parameters (e.g. weighting of the delivery date, number of setup changes, etc.). The different simulation results can be created, deleted and compared. The best simulation result is transferred to the live planning.

Module Highlights

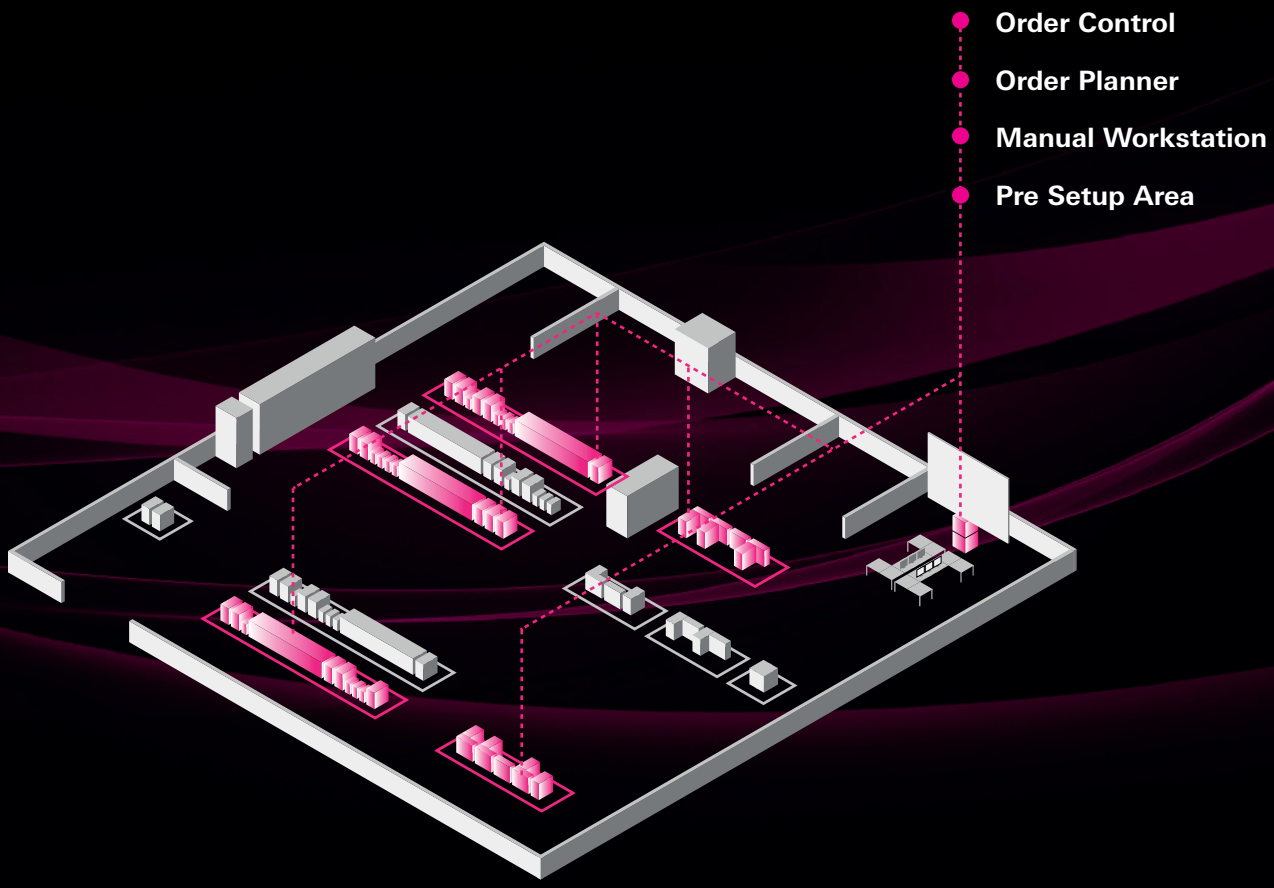
Automatic order planning for SMD lines in a separate simulation area

Optimal distribution of orders

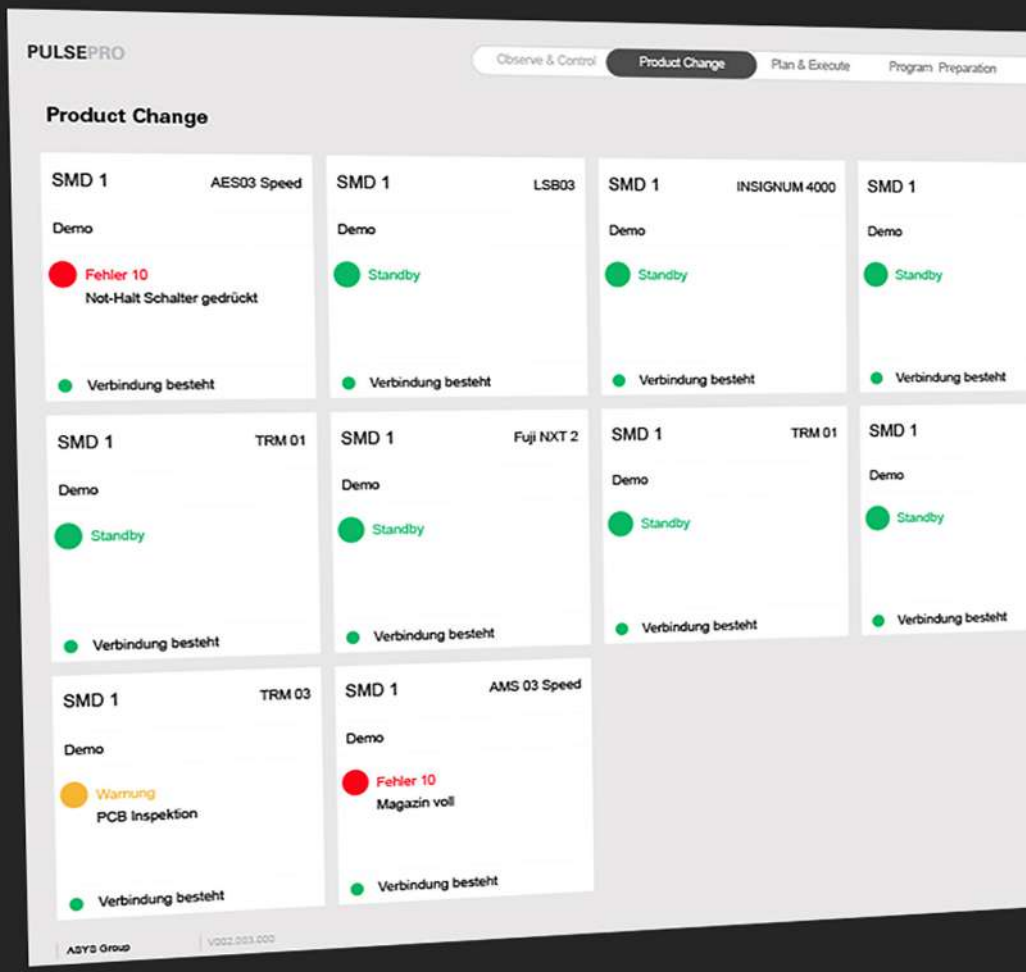
Clear presentation of orders and production times in Gantt diagrams

Optimal transparency of current and planned order processing

Functions



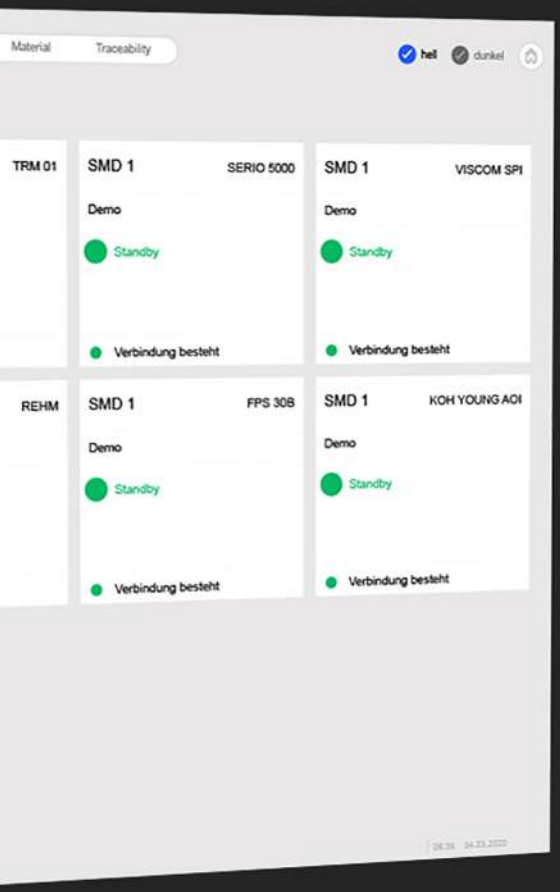
Machine Layer Line Layer Factory Layer


PULSEPRO
Observe & Control
Product Change
Plan & Execute
Program Preparation
Product Change
SMD 1
AES03 Speed
Demo
Fehler 10
Not-Halt Schalter gedrückt
Verbindung besteht
SMD 1
LSB03
Demo
Standby
Verbindung besteht
SMD 1
INSIGNUM 4000
Demo
Standby
Verbindung besteht
SMD 1
Demo
Standby
Verbindung besteht
SMD 1
TRM 01
Demo
Standby
Verbindung besteht
SMD 1
Fuji NXT 2
Demo
Standby
Verbindung besteht
SMD 1
TRM 01
Demo
Standby
Verbindung besteht
SMD 1
Demo
Standby
Verbindung besteht
SMD 1
TRM 03
Demo
Warnung
PCB Inspektion
Verbindung besteht
SMD 1
AMS 03 Speed
Demo
Fehler 10
Magazin voll
Verbindung besteht
ASYS Group

Software Module

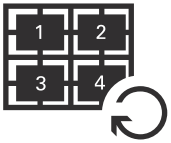
Product Change

Stop Losing Time on
Product Changeover



Software Module

Product Change



Product Change
In the PULSE PRO module „Product Change“ the product change at the line is triggered by only one click. The parameters are sent to all machines of the line and all settings are stored in a global database. These can be checked, changed and duplicated at any time. This results in a faster NPI (New Product Introduction) compared to programming on single systems. All ASYS Group machines as well as third party systems can be integrated.

Module Highlights

Product change of a line in a few minutes

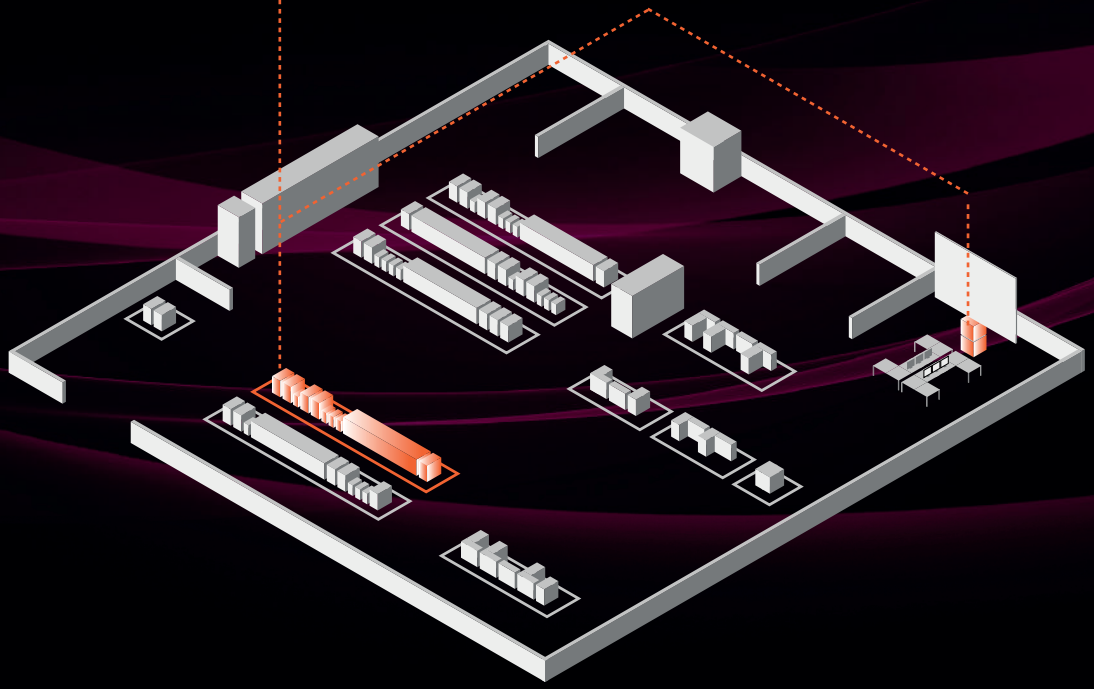
Simple, controlled product changeover of the entire line

Faster NPI compared to programming on individual systems

Avoidance of transmission errors

Functions

- **Product Change**
- **Product Change Lite**



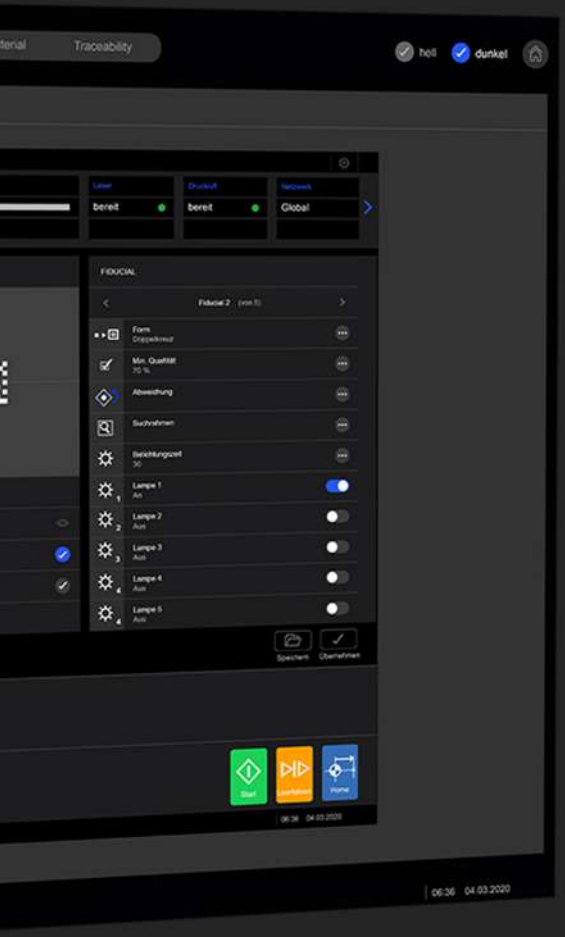
- **Machine Layer**
- **Line Layer**
- **Factory Layer**


PULSEPRO
Observe & Control
Product Change
Plan & Execute
Program Preparation
Offline Programming
SIMPLEX PRO
600 x 600 x 5
AAC_14581_437
OK
ANSICHT
SEITE
Position
Mark
Badmark
ASYS Group
EKRA
Achsen
X Position
Y Position
KAMERA
ASYS Group
V002.003.000

Software Module

Program Preparation

Offline Programming of
Machine



Software Module

Program Preparation



Program Preparation
With the offline programming tools in the PULSE PRO module „Program Preparation“, the machines can be programmed at a PC workstation while another program is running. This reduces the downtimes significantly.

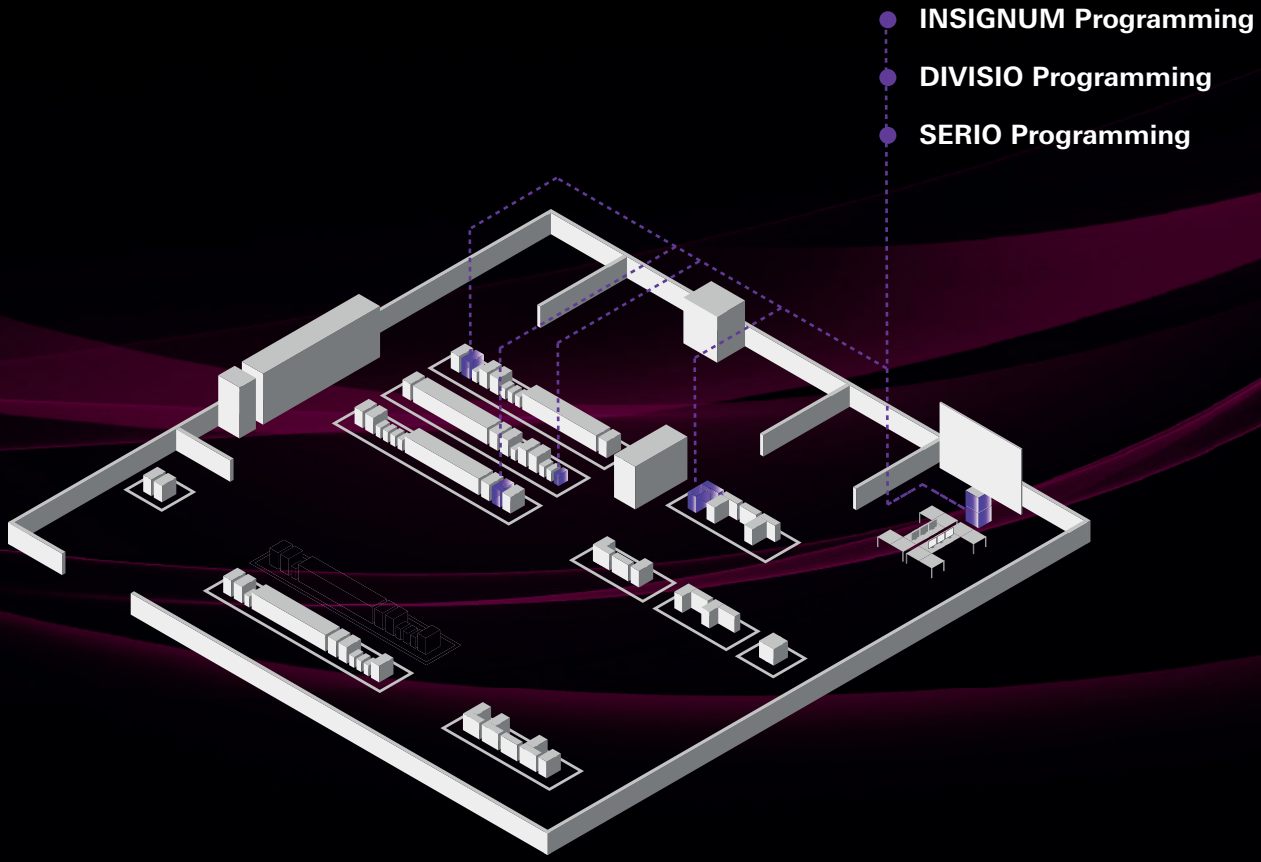
Module Highlights

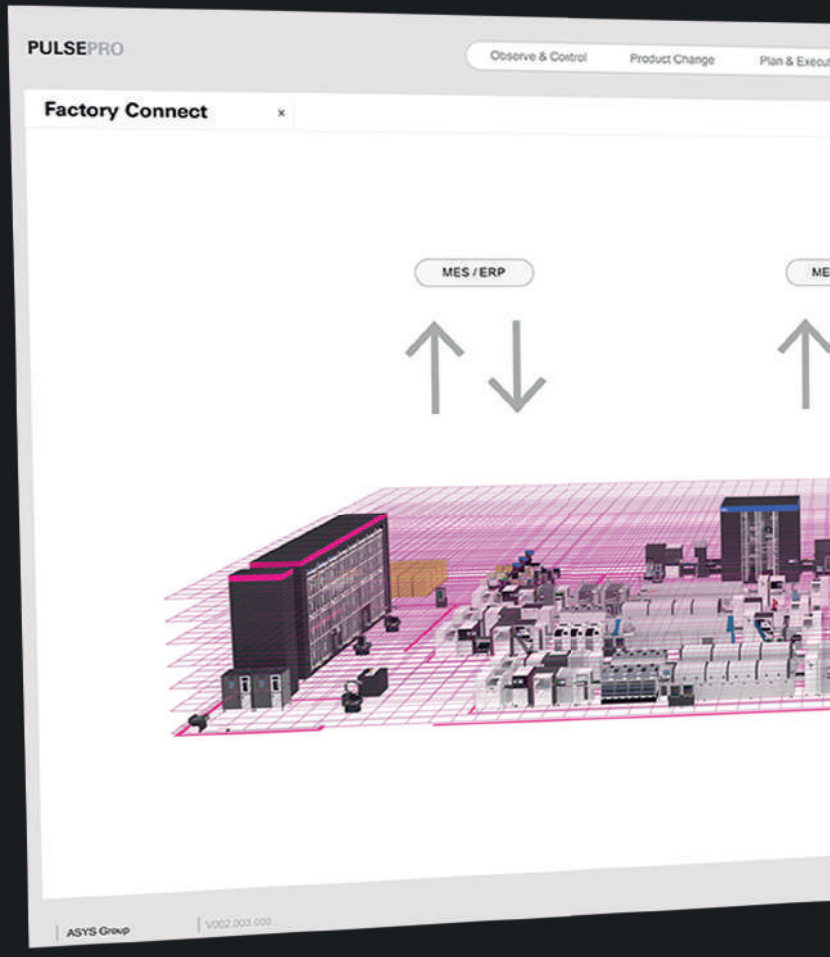
Offline programming during production

No production stop

No multiple programming required

Functions

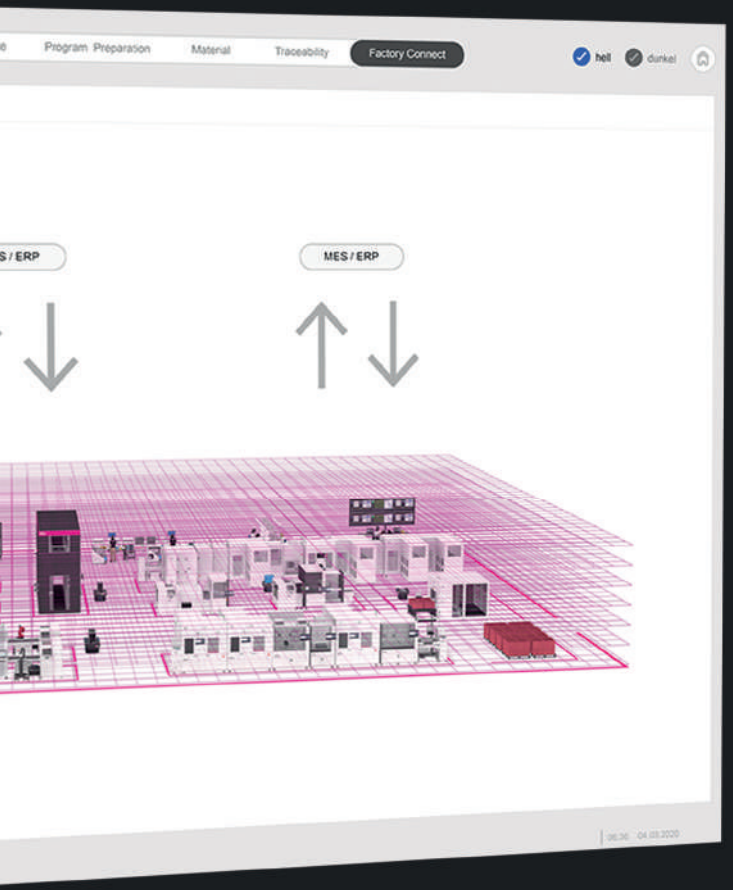

INSIGNUM Programming
DIVISIO Programming
SERIO Programming
Machine Layer
Line Layer
Factory Layer


PULSEPRO
Observe & Control
Product Change
Factory Connect
MES / ERP
ASYS Group

Software Module

Factory Connect

Import & Export of Data



Software Module

Factory Connect



Factory Connect
In the PULSE PRO module „Factory Connect“ data can be exchanged with an ERP/MES interfaces. The order data and material data (UID and RFID) can be imported from a superior system for detailed order planning. For a timely and optimal disposition, production accounts in the ERP system are adjusted and changed depending on the material movement in the production. Status and error messages from machines can also be automatically transferred to a higher-level system via the CFX interface (PULSE interface). Furthermore, an interface is provided for synchronizing a higher-level factory calendar.

Module Highlights

Automatic transfer of order data and material data from higher-level system for order and material management in PULSE PRO

Transfer of an externally created detailed order planning in PULSE PRO

Synchronization of a superior factory calendar

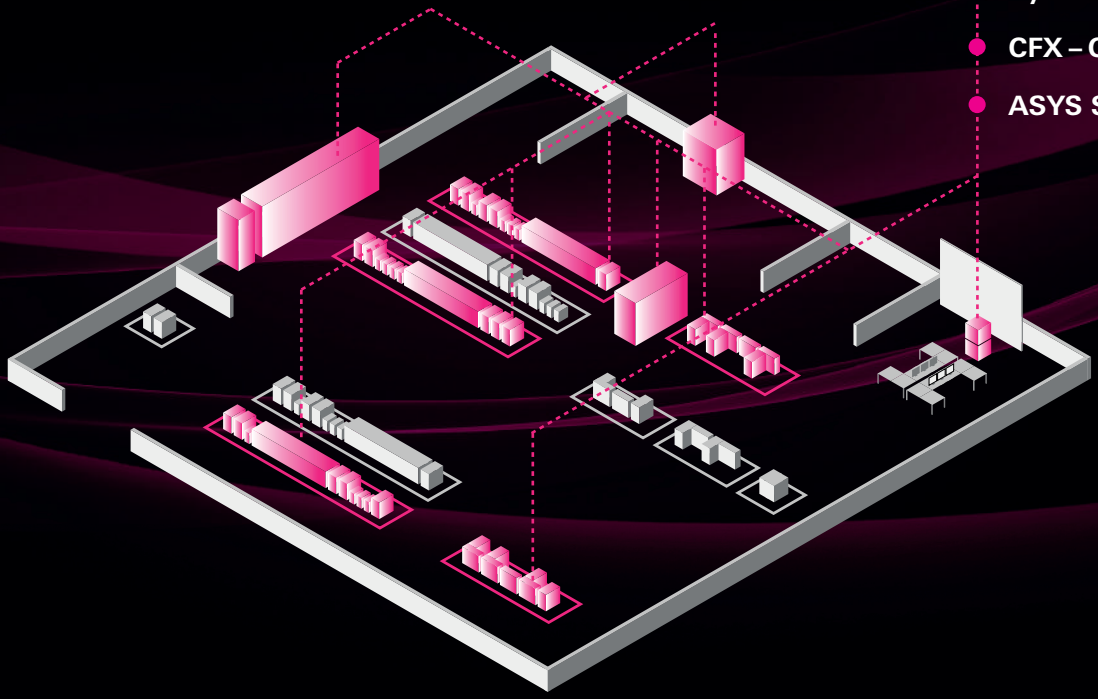
Reconciliation and modification of production accounts in the ERP system depending on material movements in production for real-time and optimal disposition

Functions

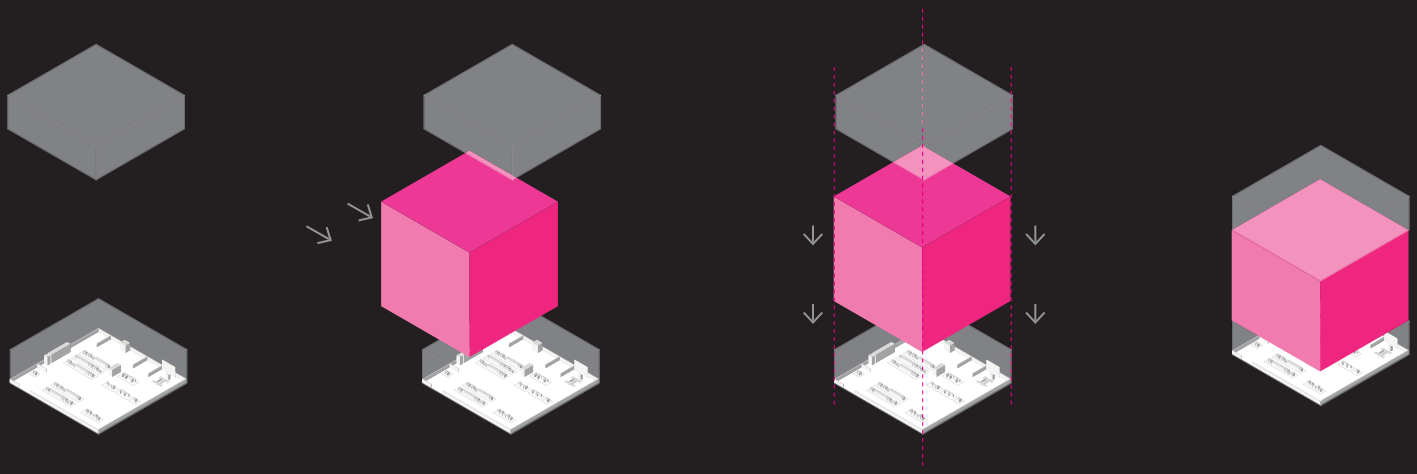
MES/ERP

↑↓

- **Sync Factory Calendar**
- **Import Order Data**
- **Import Order Sequence**
- **Import Material Data**
- **Sync SAP – Material**
- **CFX – Connect Smart Alerts**
- **ASYS Socket Interface**



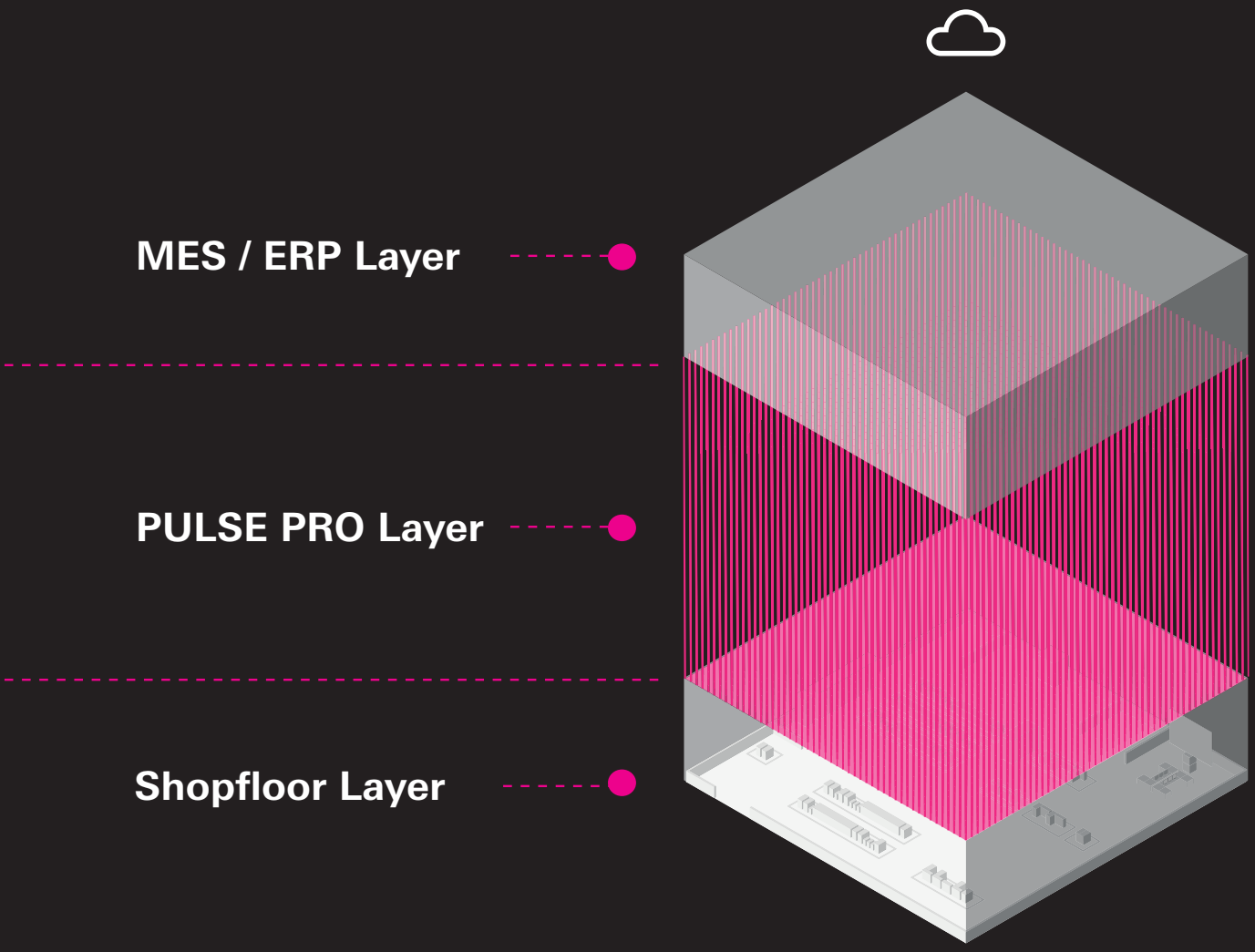
Machine Layer **Line Layer** **Factory Layer**



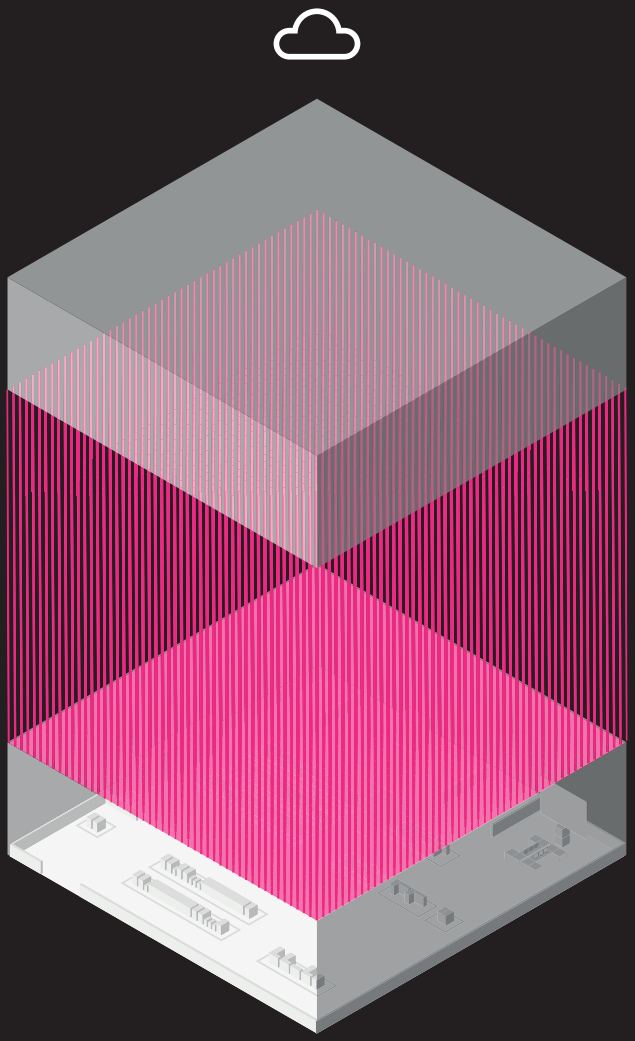
The Control Center of the Smart Factory

Closing the Gap between Shopfloor and MES / ERP

With PULSE PRO, the operator has the production in sight and can achieve an optimum of productivity. In this way, the faster growing complexity becomes manageable. PULSE PRO is the control center of the Smart Factory and offers solutions on all layers with the multiple functions. This closes the gap between the shopfloor and the MES/ERP systems. PULSE PRO easily switches between existing systems and complements the functions that are still not or only in parts considered. The integration into a production line can be done in several steps if desired due to modularity and easy scalability.



The base of a Smart Factory is an overall connection of the entire shopfloor. All systems have to be connected to achive a real added value. ASYS is an expert in implementing connections and interfaces between different systems and offers the right software solutions. The own powerful „ASYS Standard Interface“ is used for the connection of machines of different manufacturers. In addition, control systems can be networked with interfaces such as IPC/CFX or SEMI SMT-ELS. Additionally, the PULSE PRO software solutions are able to connect to MES and EPR systems. ASYS has already implemented more than 5,000 connections to all common systems and orchestrates the shopfloor with smart functions from PULSE PRO.



MES / ERP Layer

PULSE PRO Layer

Shopfloor Layer

Open Interfaces & Connections to all Systems

Customer specific interfaces
AEGIS | AIS, BJI/BCI | BTE | camLine | ComCell | Cogiscan | DM-Systems | FIS | IFM-Data Base | Infor | iTAC | Mentor Graphics | OpCon | Predictor | SAP | SIMATIC-IT | SPEA | SYSTEMA | TCPIP | Valor | ZVEI

ASYS STANDARD INTERFACE

Easy-Link

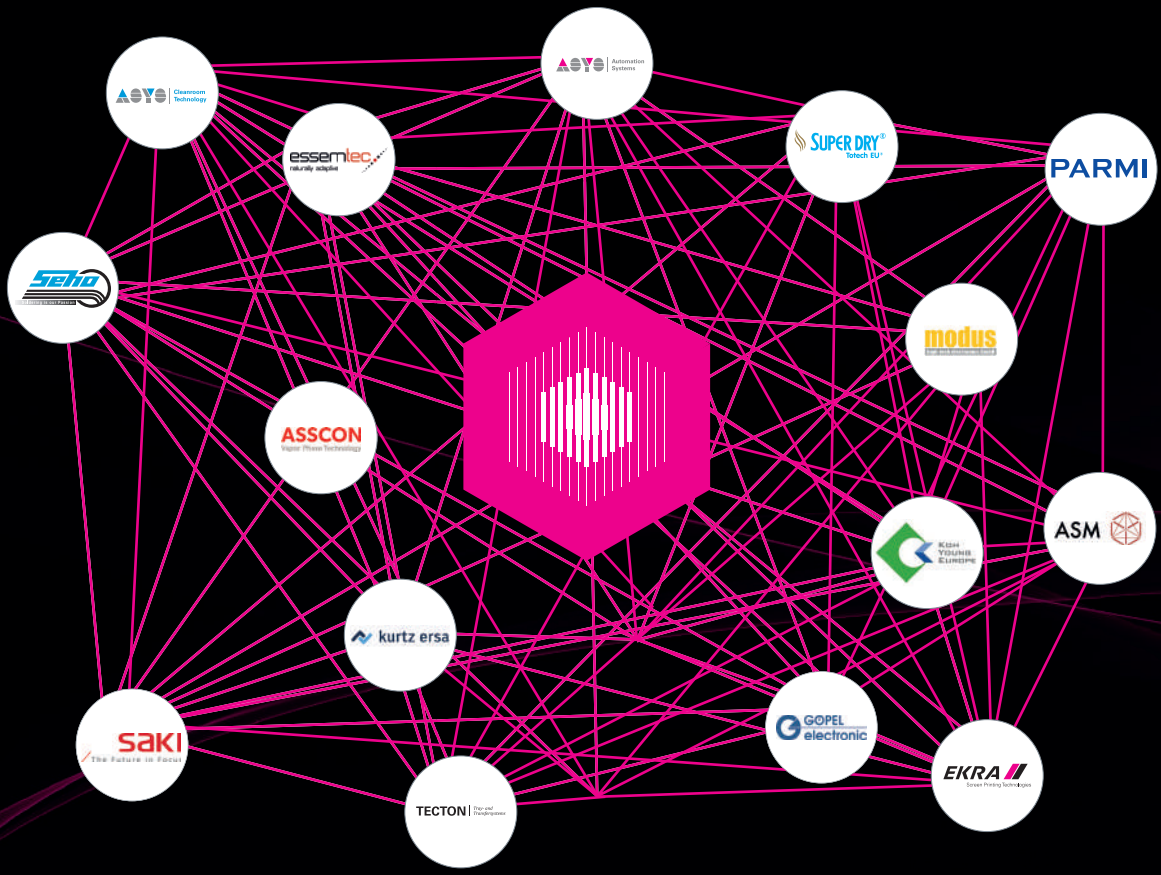
OIB

iLNB

HERMES

PULSE PRO

Community



The PULSE-Community is a strong network of manufacturers in the electronics industry. All those manufacturers have already integrated the „ASYS Standard Interface“ for the connection of their machines to ASYS Software Solutions. Thanks to this standardized connection the entire production line can be connected today. We offer the „ASYS Standard Interface“ free for any other manufacturers, in order to provide a maximum flexibility and functionality to your entire production line.

VISCOM vision technology

»We are delighted to be represented on the PULSE PRO line by our 3D solder paste inspection. This is how we do intelligent process optimization for Industrie 4.0.«

Detlef Beer
Product Development
AOI-Component Inspection,
Viscom



rehm THERMAL SYSTEMS

»You should always know what's happening...system monitoring is increasingly important for our processes, such as soldering.«

Michael Hanke
Head of Sales, Rehm



FUJI innovative spirit

»Timing is everything. The tasklist helps our customers to keep a clear overview during assembly.«

Klaus Kölbel
Sales Manager, Fuji



SMT THERMAL DISCOVERIES

»The SMT-line-monitoring recognizes defects even before they can occur and is even more effective with PULSE PRO. A reasonable Industrie 4.0 approach.«

Matthias Pfeifer
Head of Sales & Marketing,
SMT



kolb

»Our cleaning systems are moving right next to the line.«

Bert Schopmans
Director Sales/Application
Technology Deutschland, Kolb



ASYS GROUP

TRANSFORMING IDEAS
Automate, Digitalize & Connect

ELECTRONICS

AUTOMATE, DIGITALIZE & CONNECT

LIFE SCIENCE

ENERGY

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www.asys-group.com

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