



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

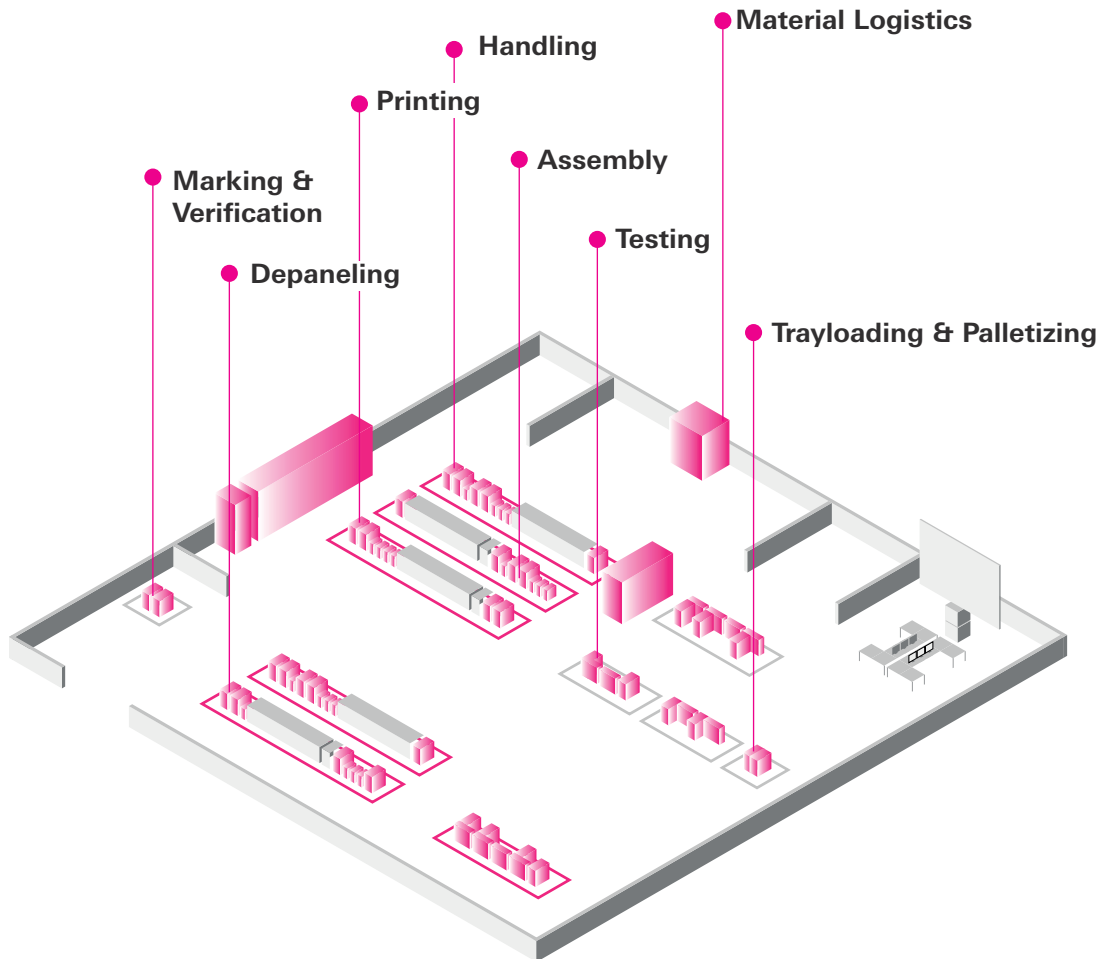
Import & Export of Data

30 – 33

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

Smart Factory

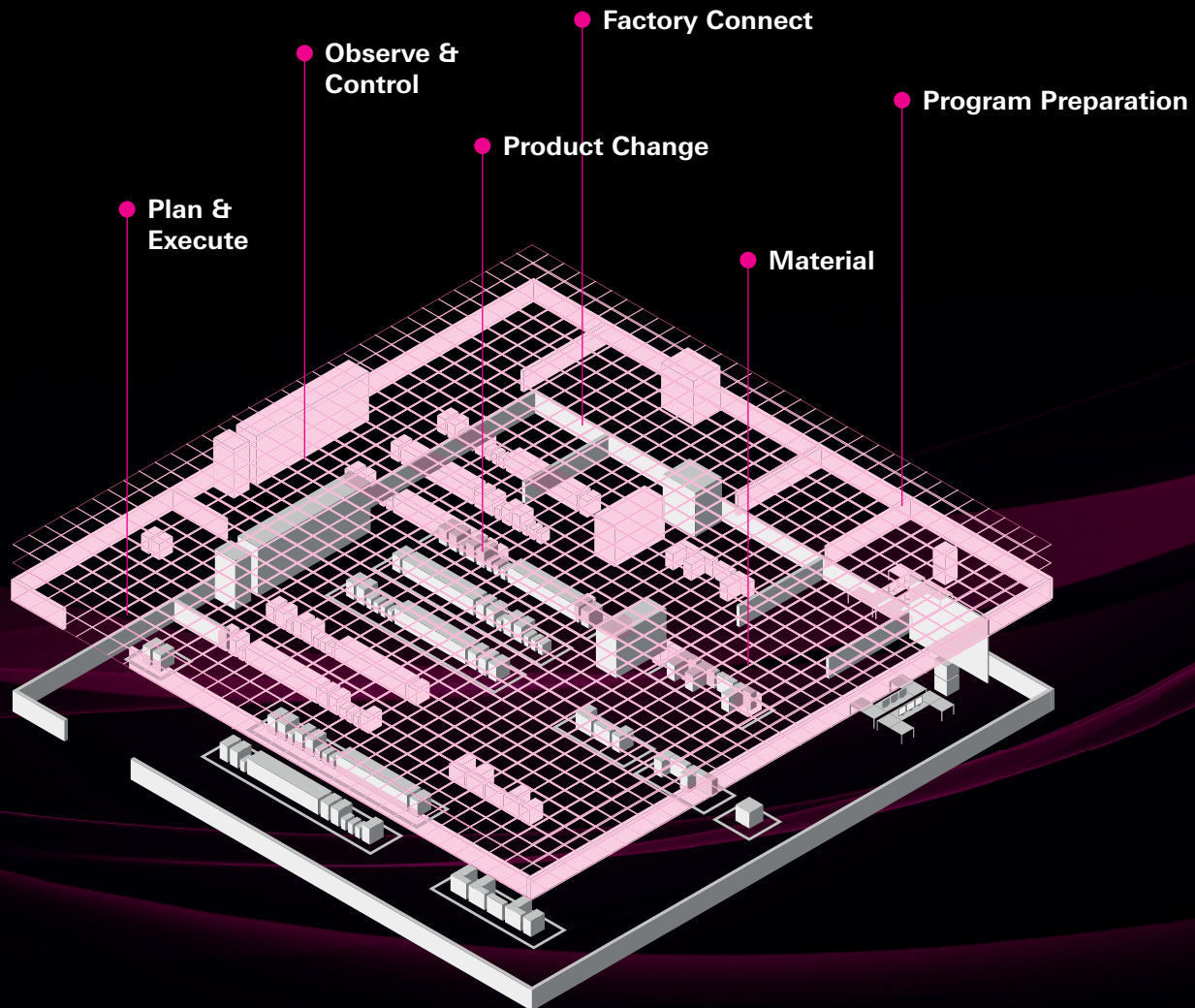
Machine Layer



PULSE PRO Software
solutions for the entire
Smart Factory.

Smart Factory

Software Layer



PULSE PRO

Advantages at a Glance

All functions in a uniform look & feel

All software functionalities in an organized and modular structure

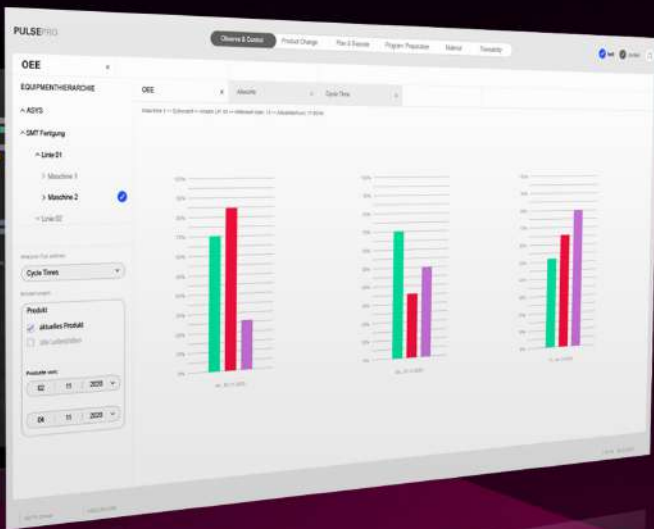


Easier control and visualization of automated material flows on the entire shopfloor

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	●		

Cycle Time x Material Locator x

EQUIPMENTHIERARCHIE

ASYS

SMT Fertigung

Linie 01

Maschine 1

Maschine 2

PROPERTIES

Analysertyp wählen

CYCLE TIME

Einstellungen

aktuelles Produkt

alle Leiterplatten

Die Werten:

50

Produkt vom:

30 06 2020

Produkt bis:

04 09 2020

automatische Aktualisierung

Cycle Time x OEE x Abwärts x

Maschine 2 - Zykluszeit - Anzahl LP: 55 - Mittelwert über: 10 - Aktualisiert um: 17:53:54



PASS FAIL TREND

SEMI E 10 x

EQUIPMENTHIERARCHIE

ASYS

SMT Fertigung

Linie 01

Maschine 1

Maschine 2

Linie 02

EINSTELLUNGEN

Analysertyp wählen

SEMI E 10

Zeitraum

Programm & Trend

aktueller

Tag

vorheriger

1 Tag

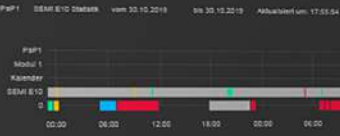
Datum vom:

30 06 2020

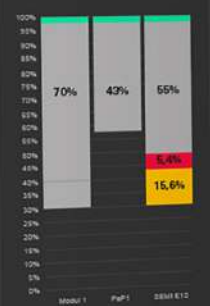
Datum bis:

04 09 2020

automatische Aktualisierung



ARBEITSEINHEITZUSTÄNDE: ANTEILE



STATISTIK

marktanteil

Durchschnitt

Durchschnitt

Zusammenfassung

Durchschnitt

Durchschnitt

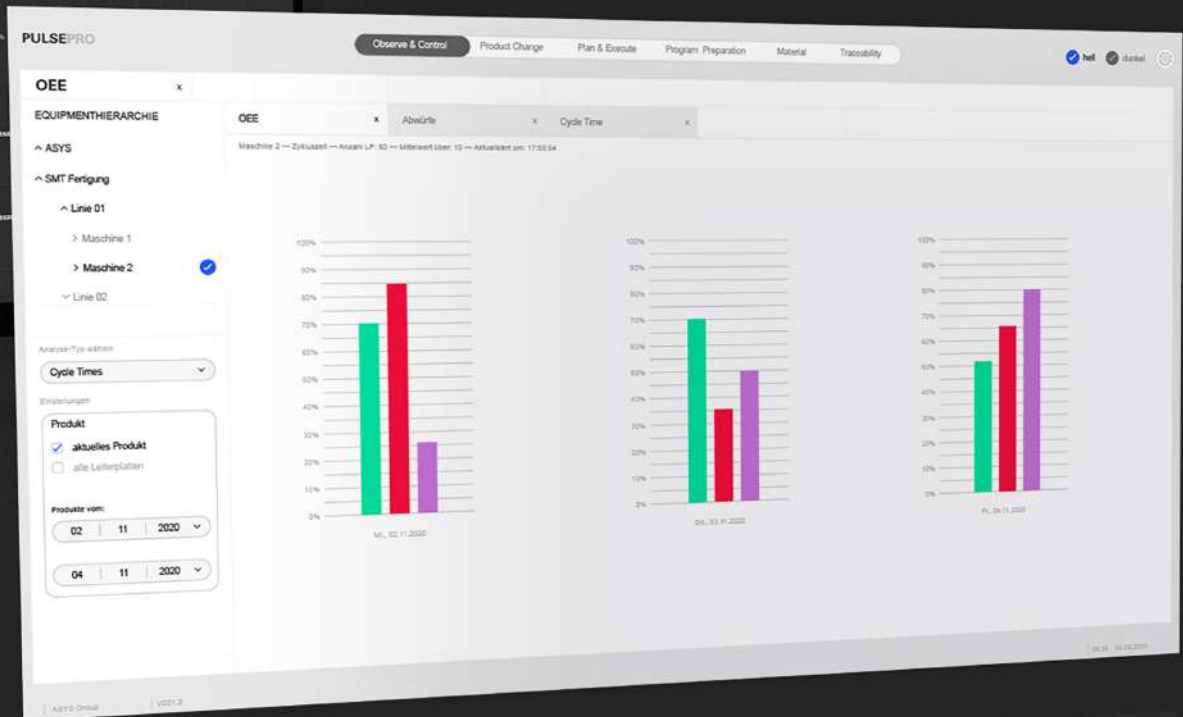
Software Module

Observe & Control

Performance of the
entire Shopfloor



Category	Value
Operative Betriebszeit	0:00:00:41
Operative Betriebszeit	0:00:00:29
Operative Betriebszeit	0:00:00:14
Operative Betriebszeit	0:00:00:00



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

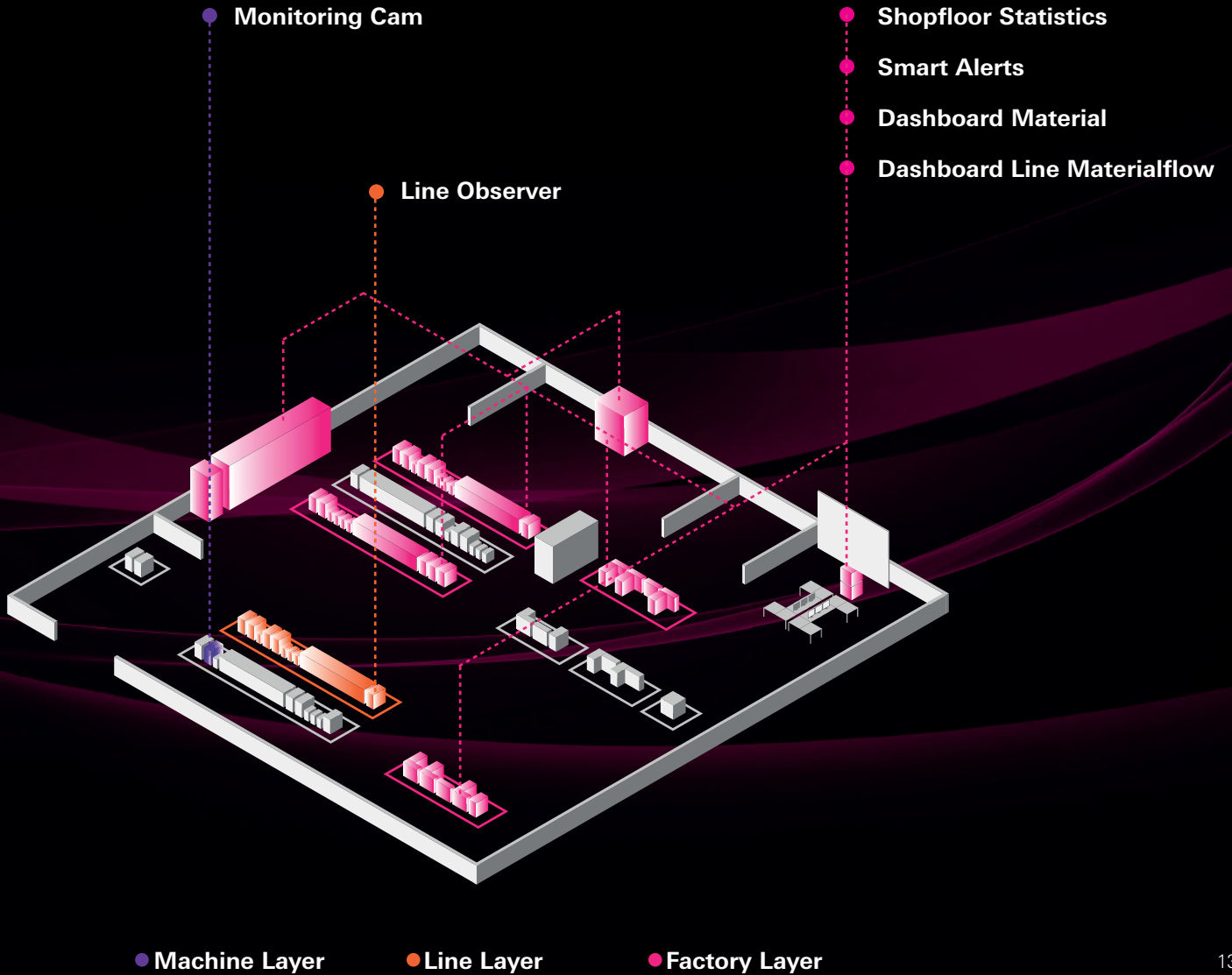
Acquisition of complete machine / process data

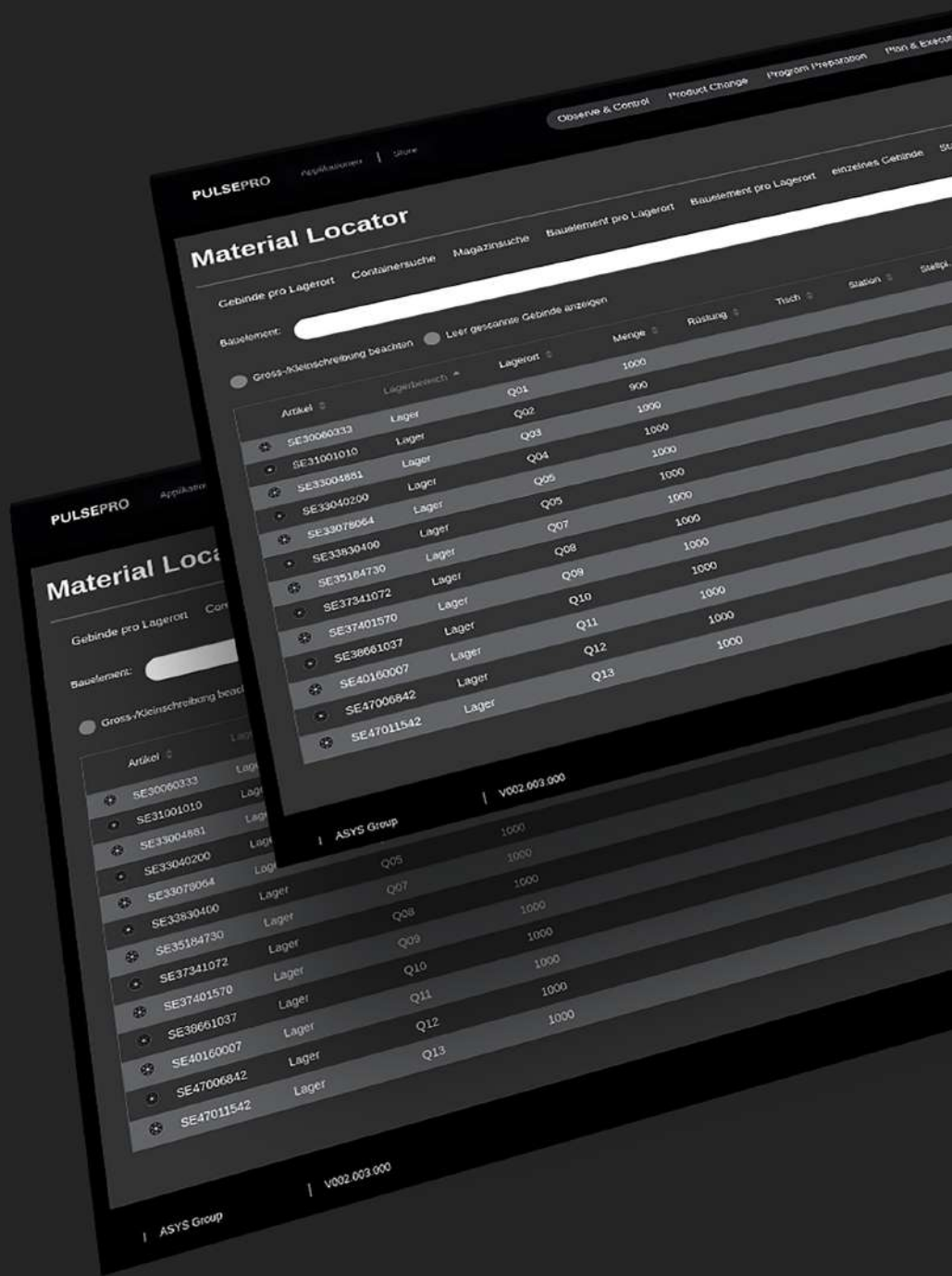
Increase of transparency, productivity and quality

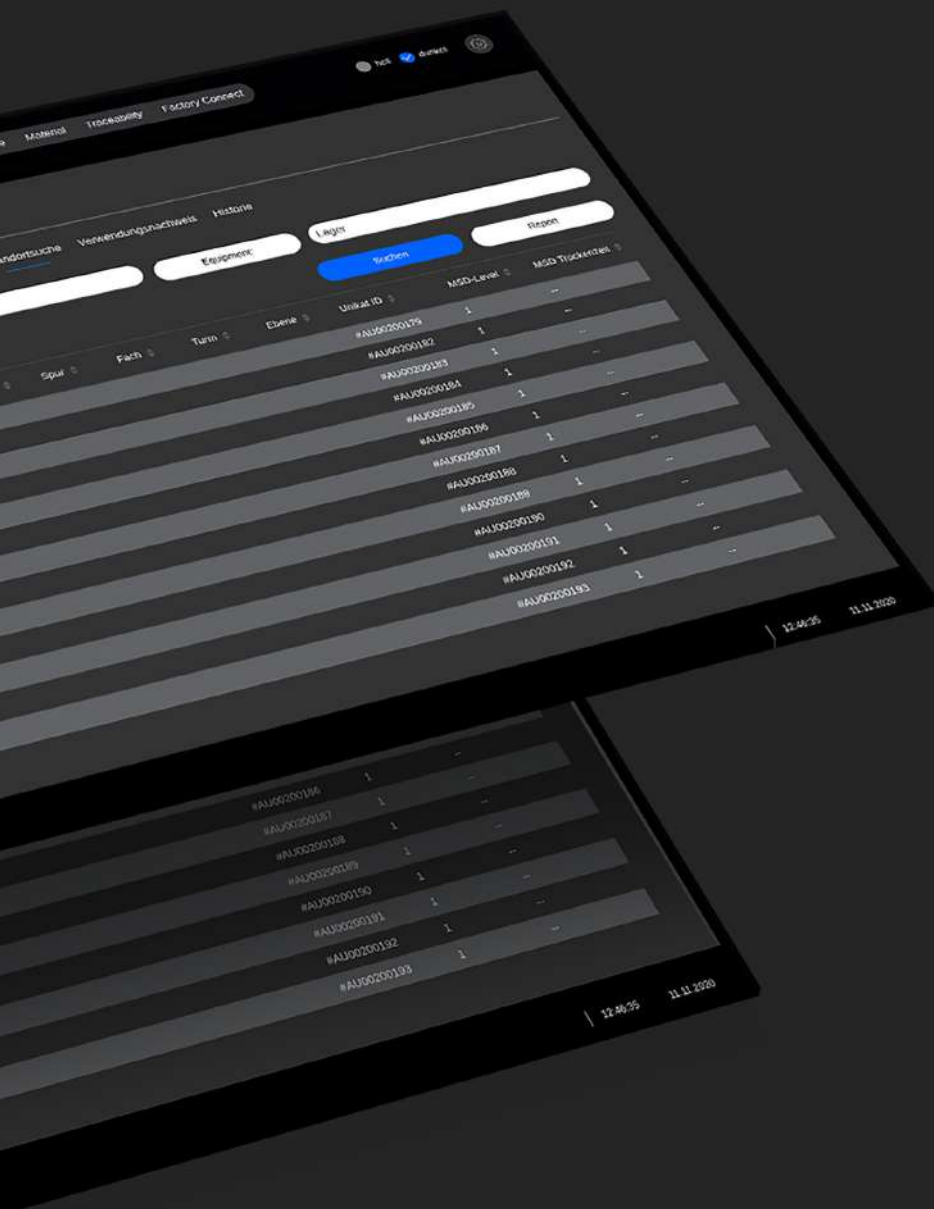
Cost reduction through support in process optimization

Observe & Control

Functions







Software Module

Material

Automate, control,
trace all material
flows & types

Material

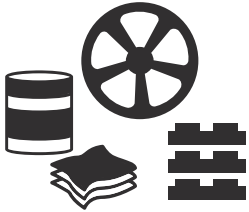
Module Highlights

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



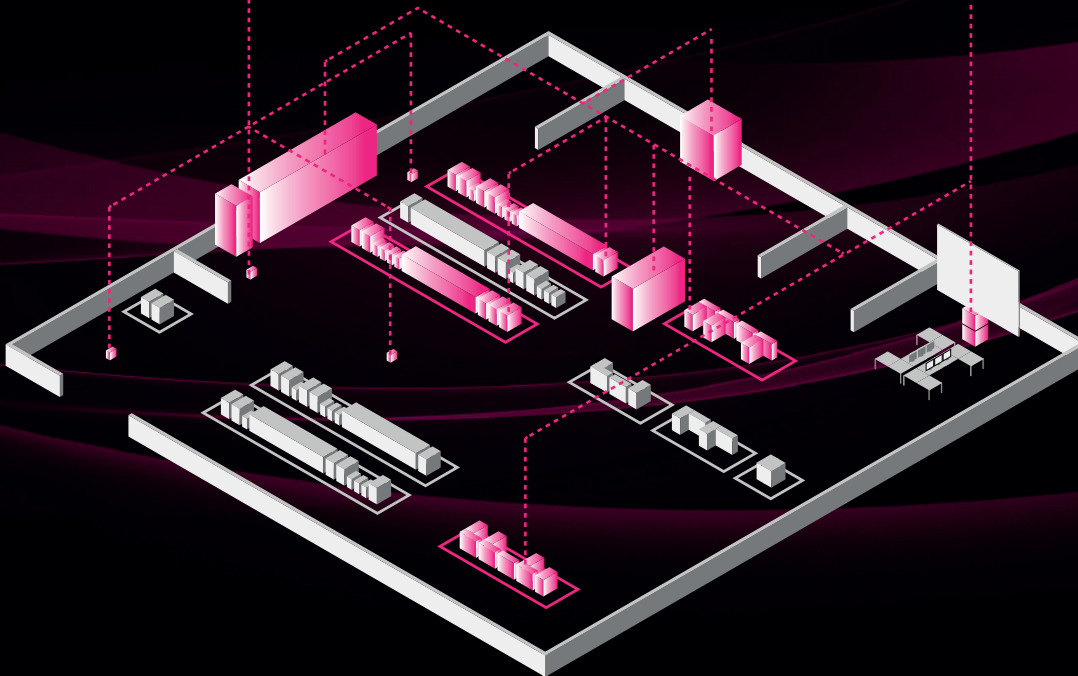
Material

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.

Functions

- Mobile Robot Manager
- Fleet Manager OMRON

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



● Machine Layer

● Line Layer

● Factory Layer

Plan & Execute

Precise Order Planning of the entire Shopfloor



PULSEPRO Applikationen | Store

Observation & Control Product Change **Plan & Execute** Program Preparation Manual Traceability

Order Control

EQUIPMENTHIERARCHIE

- ASYS
- SMT Fertigung
 - Linie 01
 - Maschine 1
 - Maschine 2
 - Linie 02

STEUERUNG

- Lieferanten bestätigen
- Lieferanten im verifizierten Freigeben
- Logbuch abrufen
- Logbuchbeleg für den Auftrag abrufen
- Logbuch erstellen
- Logbuchbeleg erfassen
- Sperrung freigeben
- Geplante Anbaubehälter freigeben
- Ausschleiden
- Aufstellung in Zwischenlager freigeben
- Fertigen
- Aufstellung auflösen
- Maschinenanwahl
- Übersicht für Maschinenanwahl
- Fehlerliste
- Übersicht der Fehlerliste
- Fehlerliste
- Übersicht der Fehlerliste
- Fehlerliste
- Übersicht der Fehlerliste

GEPLANTE ARBEITSGÄNGE

Auftrag	Modul	Information	Stückzahl	Lieferdatum	Lief. Mod.	Lagerort	Status	Produktionsdauer
3244789212	8800099			06.01.2021	23.02.2021	Lager	Engpass	0:02:43.30
3244789212	8800099			05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099			05.01.2021	23.02.2021	Lager	Engpass	0:03:41.30
3244789212	8800099			05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30

DETAILIERTER PLAN

Auftrag	Modul	Information	Stückzahl	Lieferdatum	Lief. Mod.	Lagerort	Status	Produktionsdauer
3244789212	8800099	Asplanen		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Ergebnisplan		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Ergebnis-Auftrag		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Barodenkett drucken		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Filter		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Bar		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30

UNGEPLANTE ARBEITSGÄNGE

Auftrag	Modul	Information	Stückzahl	Lieferdatum	Lief. Mod.	Lagerort	Status	Produktionsdauer
3244789212	8800099	Asplanen		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Ergebnisplan		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Ergebnis-Auftrag		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Barodenkett drucken		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Filter		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Bar		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Asplanen		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Ergebnisplan		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Ergebnis-Auftrag		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Barodenkett drucken		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Filter		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30
3244789212	8800099	Bar		05.01.2021	23.02.2021	Lager	Engpass	0:03:43.30

ASYS Group V002.003.000

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

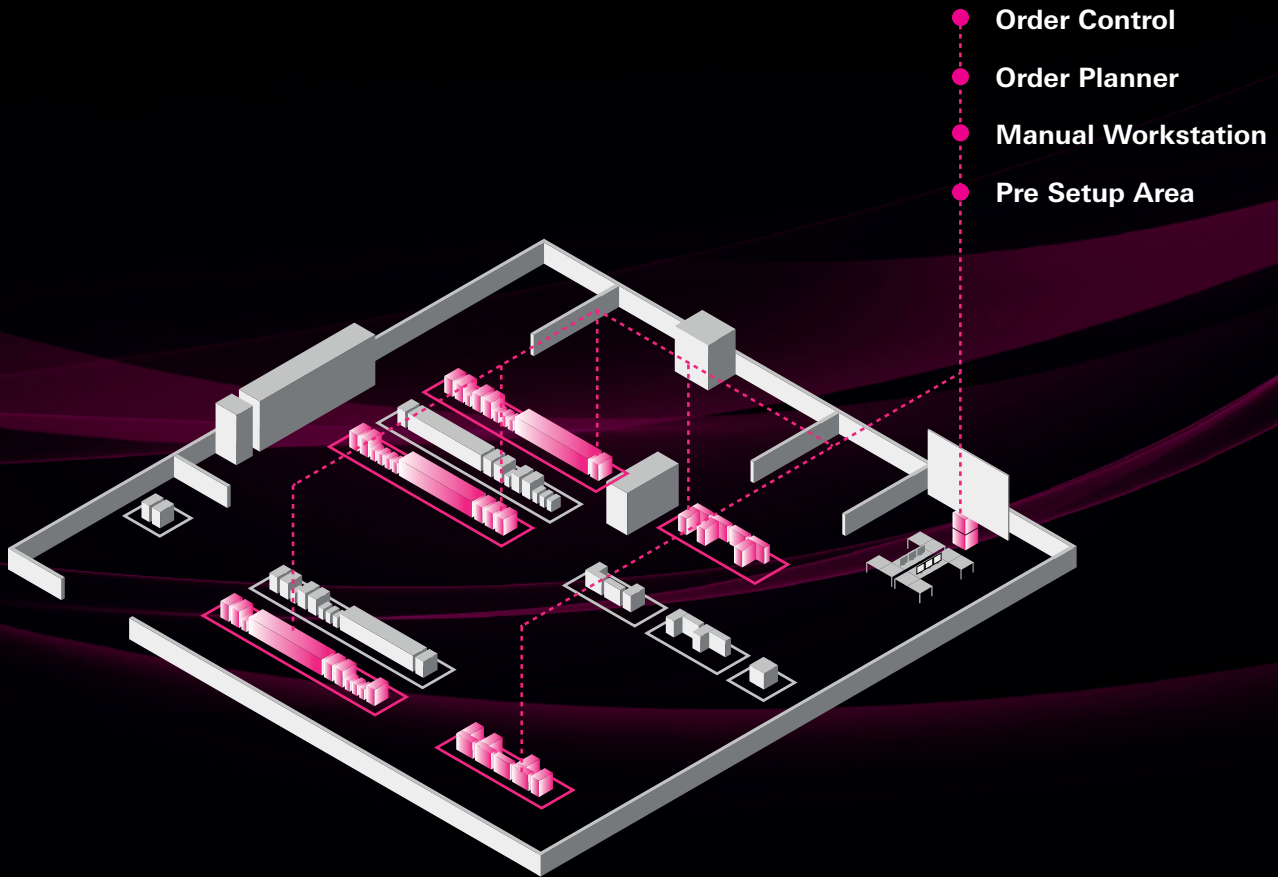
Optimal distribution of orders

Clear presentation of orders and production times in Gantt diagrams

Optimal transparency of current and planned order processing

Plan & Execute

Functions



● Machine Layer

● Line Layer

● Factory Layer

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

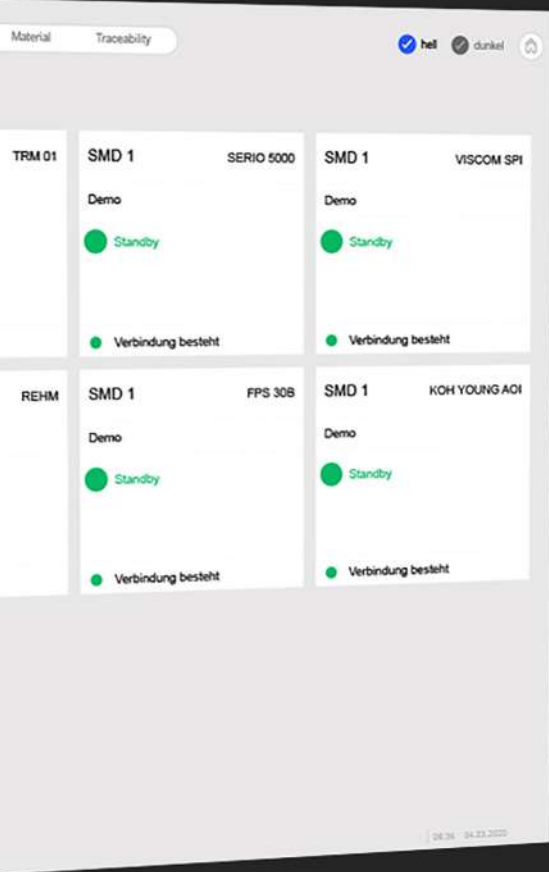
 Fehler 10
Magazin voll

 Verbindung besteht

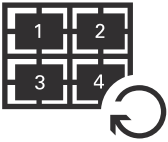
Software Module

Product Change

Stop Losing Time on
Product Changeover



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**

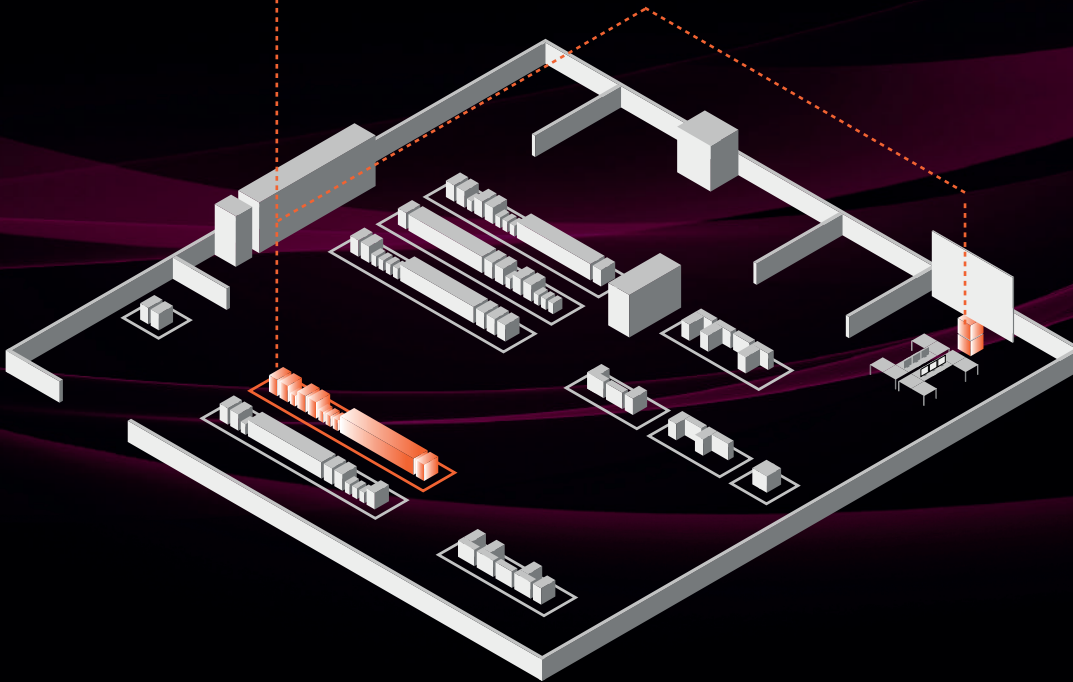
**Faster NPI compared to programming
on individual systems**

**Avoidance of
transmission errors**

Product Change

Functions

- Product Change
- Product Change Lite



● Machine Layer

● Line Layer

● Factory Layer

Offline Programming x

SIMPLEX PRO

Produktgröße 600 x 600 x 5 [mm] Länge x Breite x Höhe	Program-Produkt AAC_14581_437 30M42156M1004	Taktzeit 0:00:00 [s] Sekunden	Teilanzahl 0 [Stk] Stk [Stk]	Stromverbrauch OK	Reisegift 20.0 [m]
--	--	--	---	-----------------------------	------------------------------

ANSICHT
Kamera
Leitplatte

SEITE
Seite 1
Seite 2

Aktion

X-Position
12.00.2019 01.01.2019

Y-Position
12.00.2019 01.01.2019

Position Mark Bookmark

KAMERA

Anschleusstafel
Fiktural
Seite 1
Seite 2

Top Funktion
Neu

Leeren parameter
Kamera Scanner
I/O
Aktion
Erstellen
Markieren
Typ-Liste
Bookmark
Barcode
Bild aufnehmen

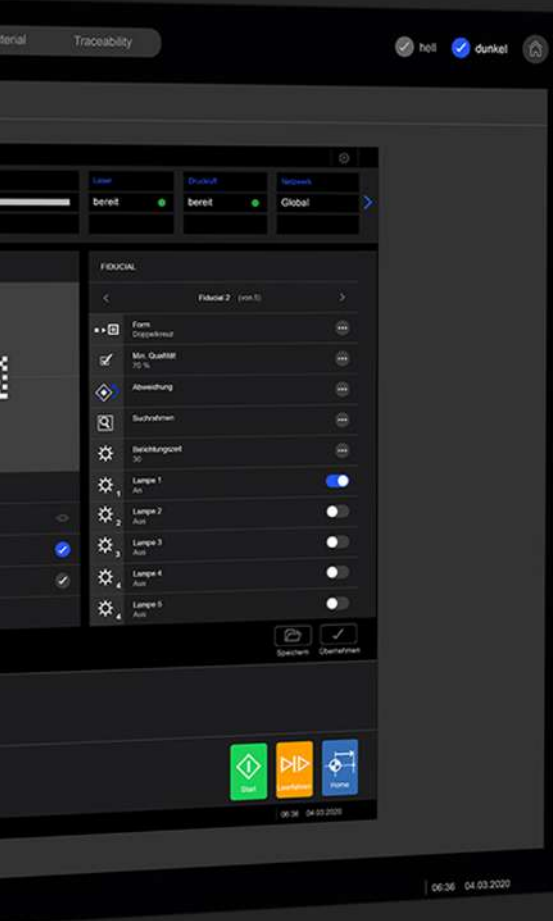
Produktion
Rezept
Handbetriebe
Maschine
Autom. Einfahren
Autom. Ausfahren
Werkstation
Bild aufzeichnen
Master aufzeichnen
Master löschen

User: Operator | V002 003 000 | Seriennummer: 2027406229984

Software Module

Program Preparation

Offline Programming of
Machine



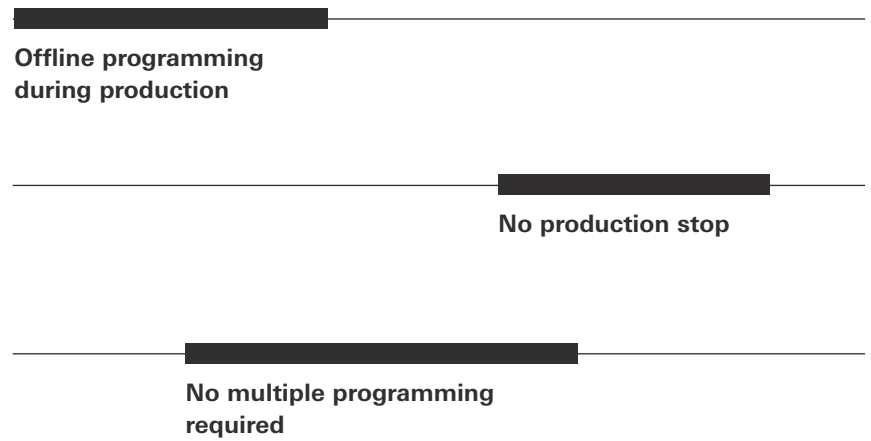
Program Preparation



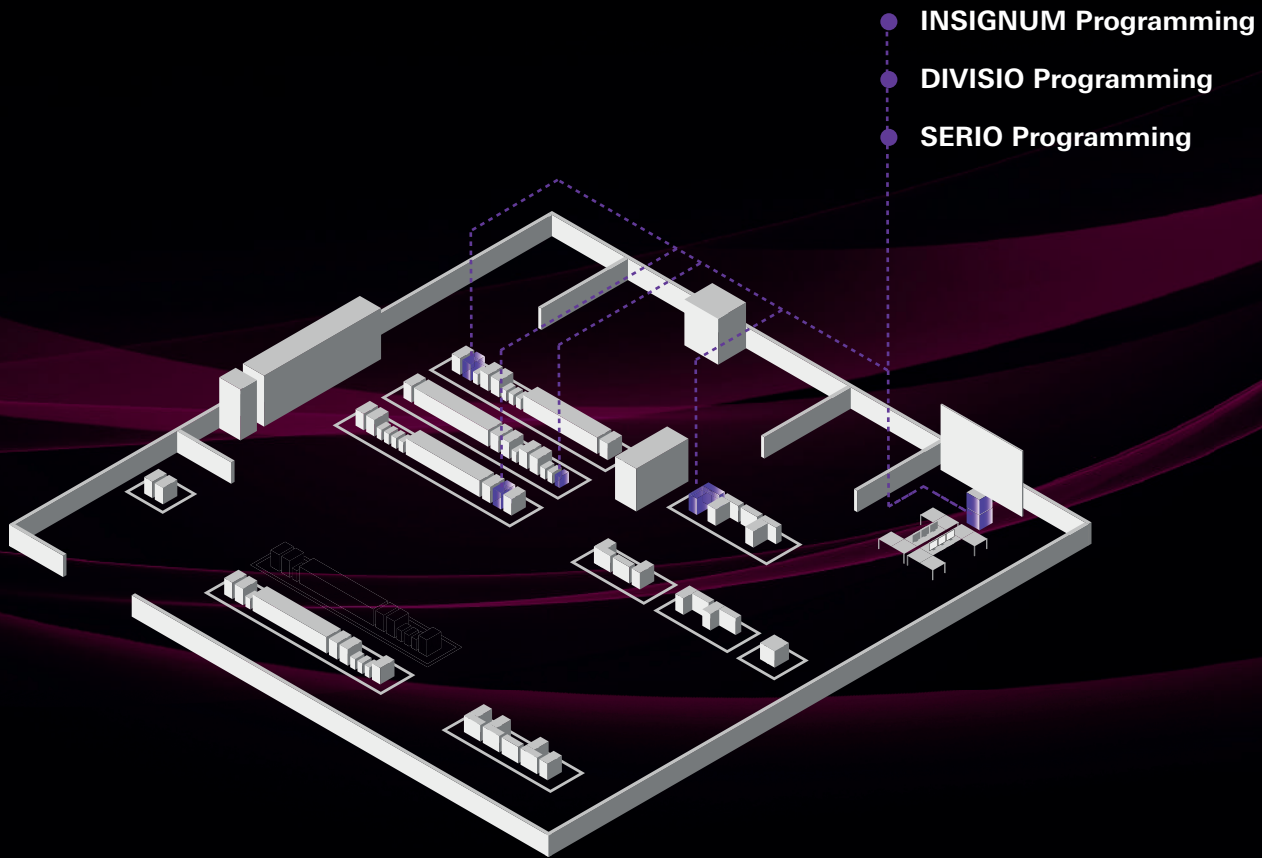
Program Preparation

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



Functions



Factory Connect

MES / ERP



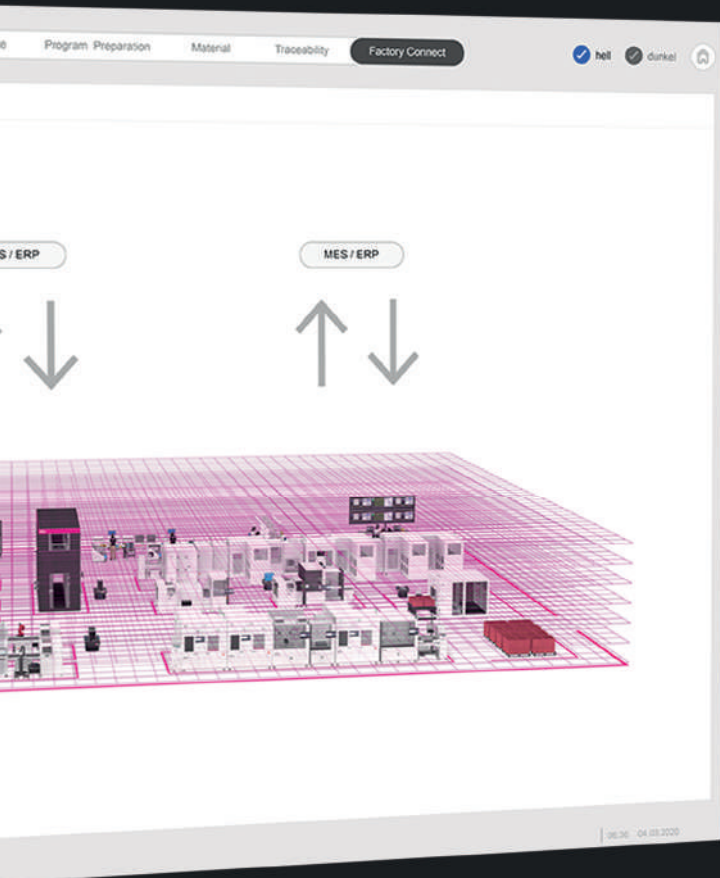
ME



Software Module

Factory Connect

Import & Export of Data



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

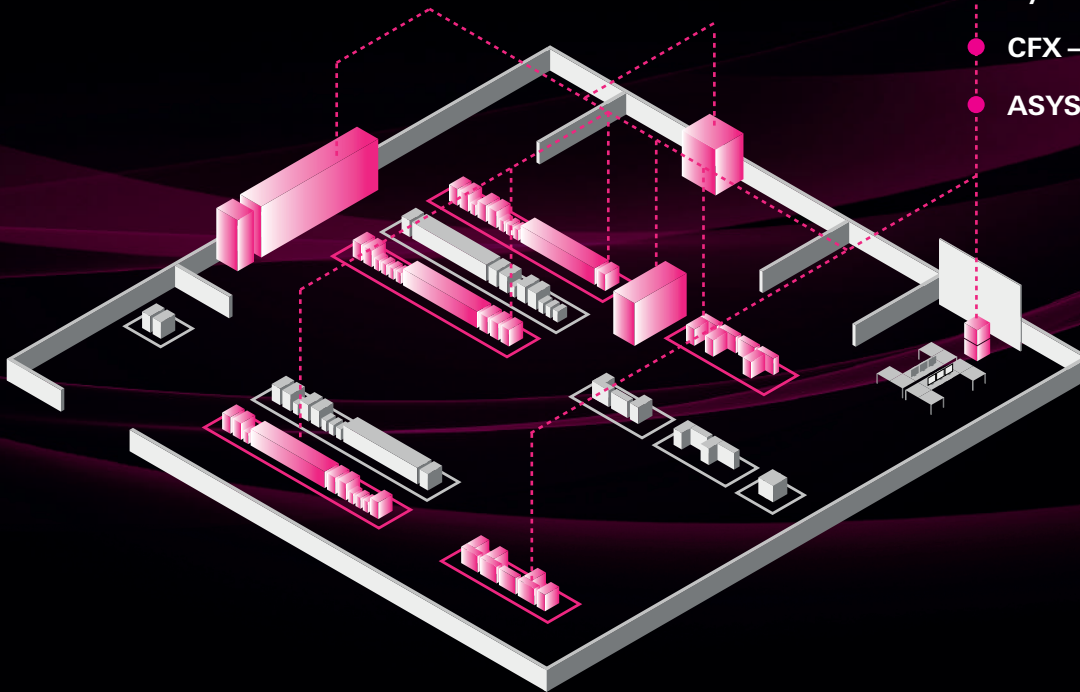
Reconciliation and modification of production accounts in the ERP system depending on material movements in production for real-time and optimal disposition

Functions

MES/ERP



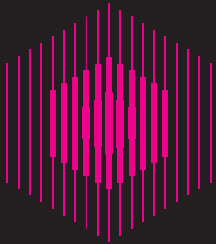
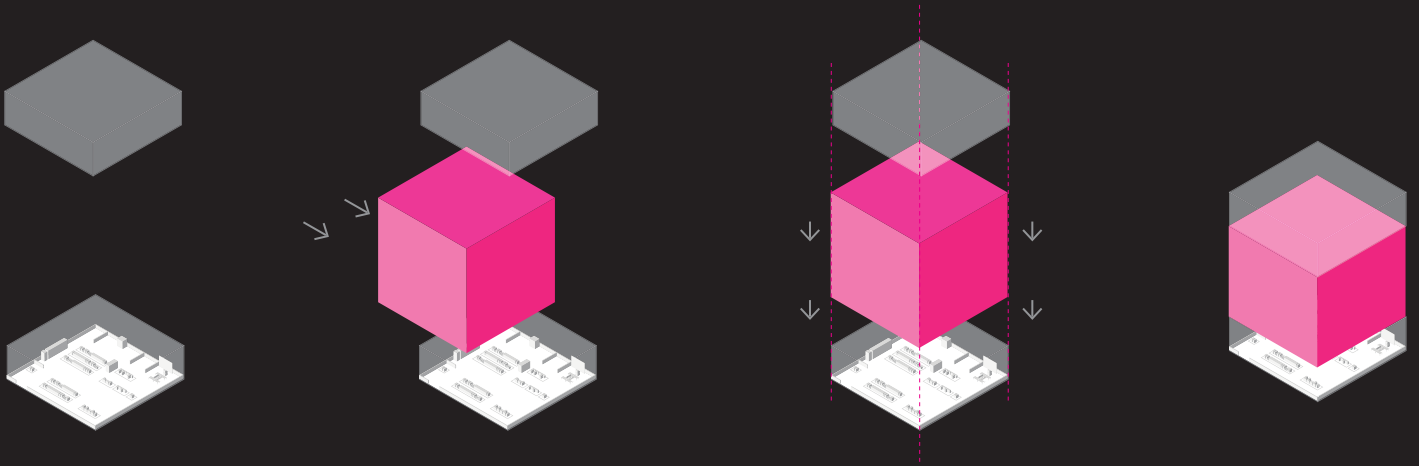
- Sync Factory Calendar
- Import Order Data
- Import Order Sequence
- Import Material Data
- Sync SAP – Material
- CFX – Connect Smart Alerts
- ASYS Socket Interface



● Machine Layer

● Line Layer

● Factory Layer



The Control Center of the Smart Factory

Closing the Gap between Shopfloor and MES / ERP

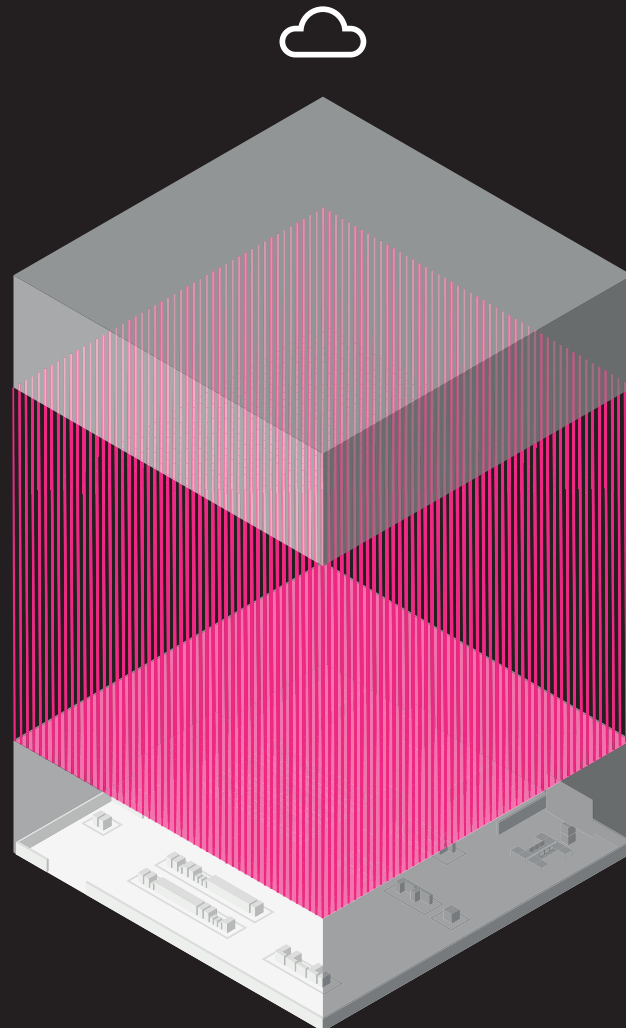
With PULSE PRO, the operator has the production in sight and can achieve an optimum of productivity. In this way, the faster growing complexity becomes manageable. PULSE PRO is the control center of the Smart Factory and offers solutions on all layers with the multiple functions. This closes the gap 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.

MES / ERP Layer

PULSE PRO Layer

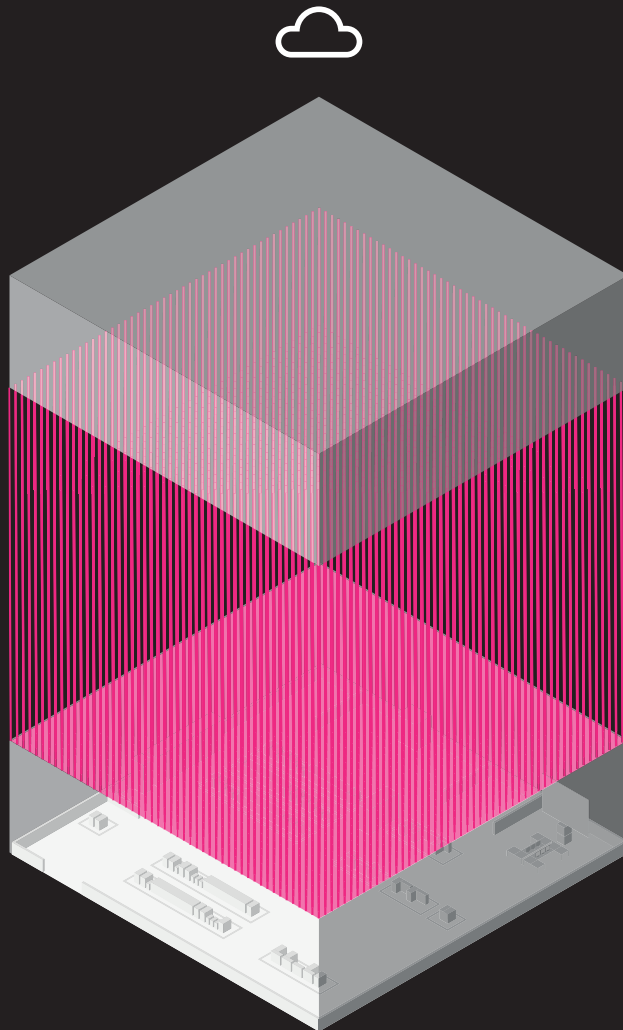
Shopfloor Layer



The base of a Smart Factory is an overall connection of the entire shopfloor. All systems have to be connected to achieve 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 ERP 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



Easy-Link

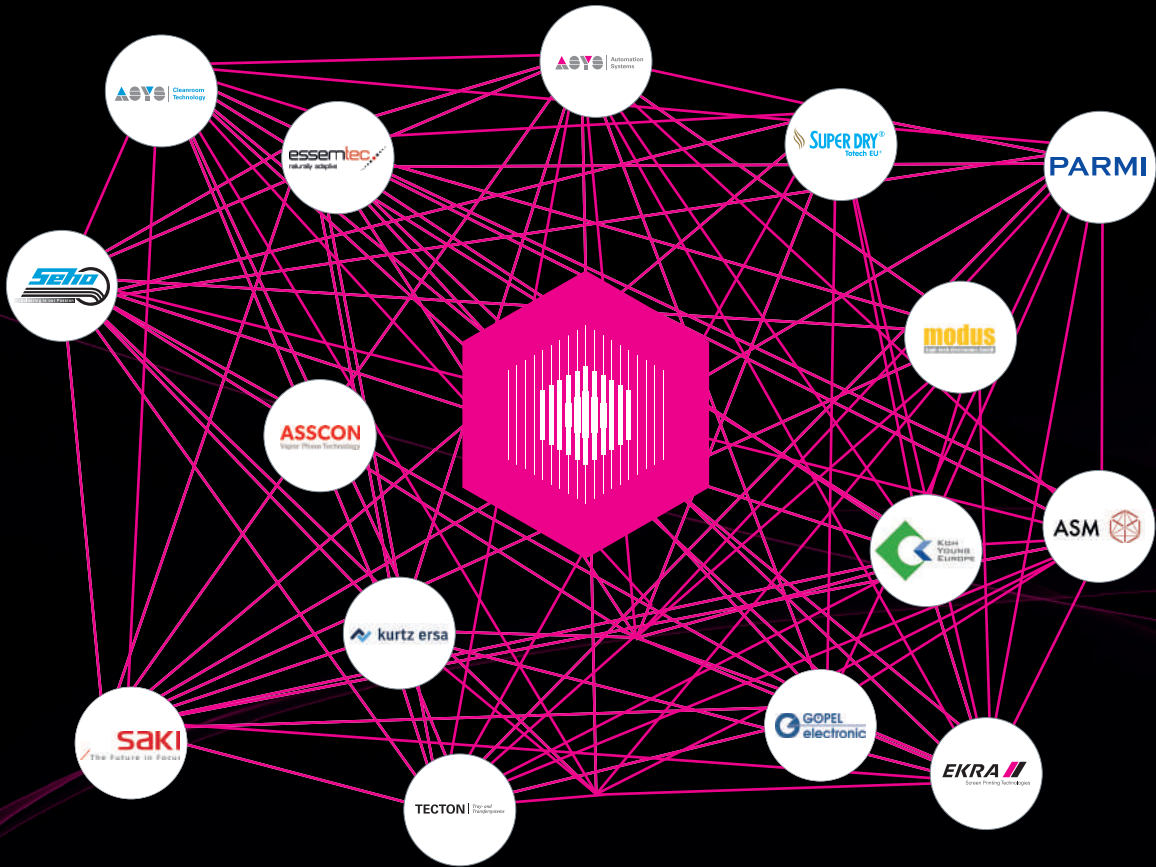
OIB

iLNB



PULSE PRO

Community





»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



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.



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

Michael Hanke
Head of Sales, Rehm



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

Klaus Kölbl
Sales Manager, Fuji



»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



»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



Visit our Website:
www.asys-group.com

ASYS Automatisierungssysteme GmbH, Benzstraße 10, 89160 Dornstadt, Germany, www.asys-group.com

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