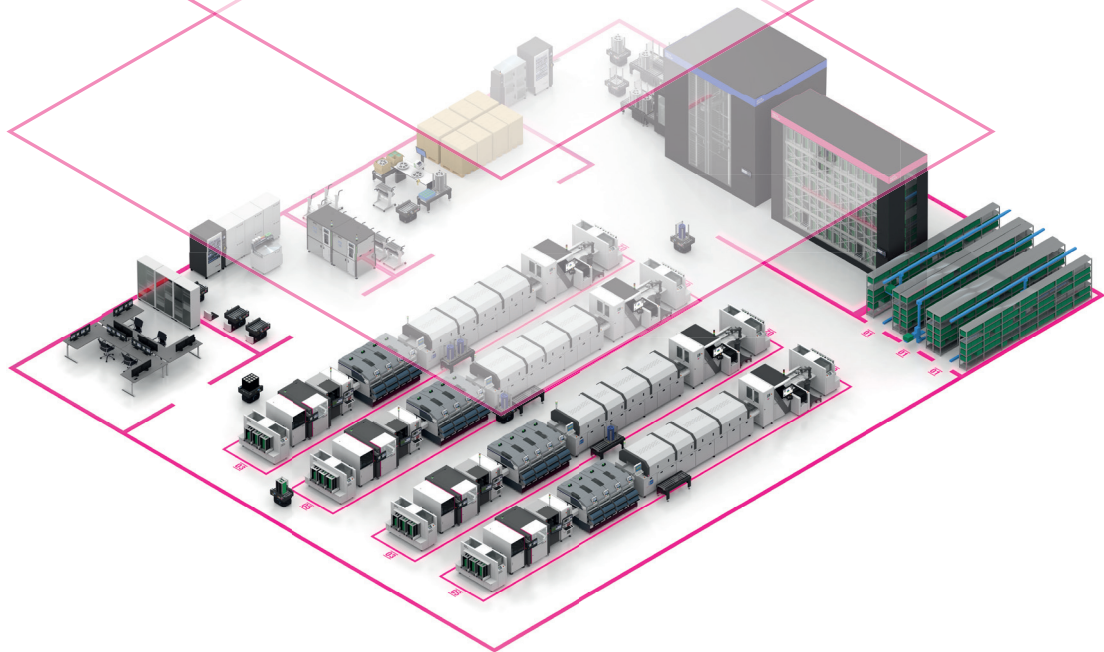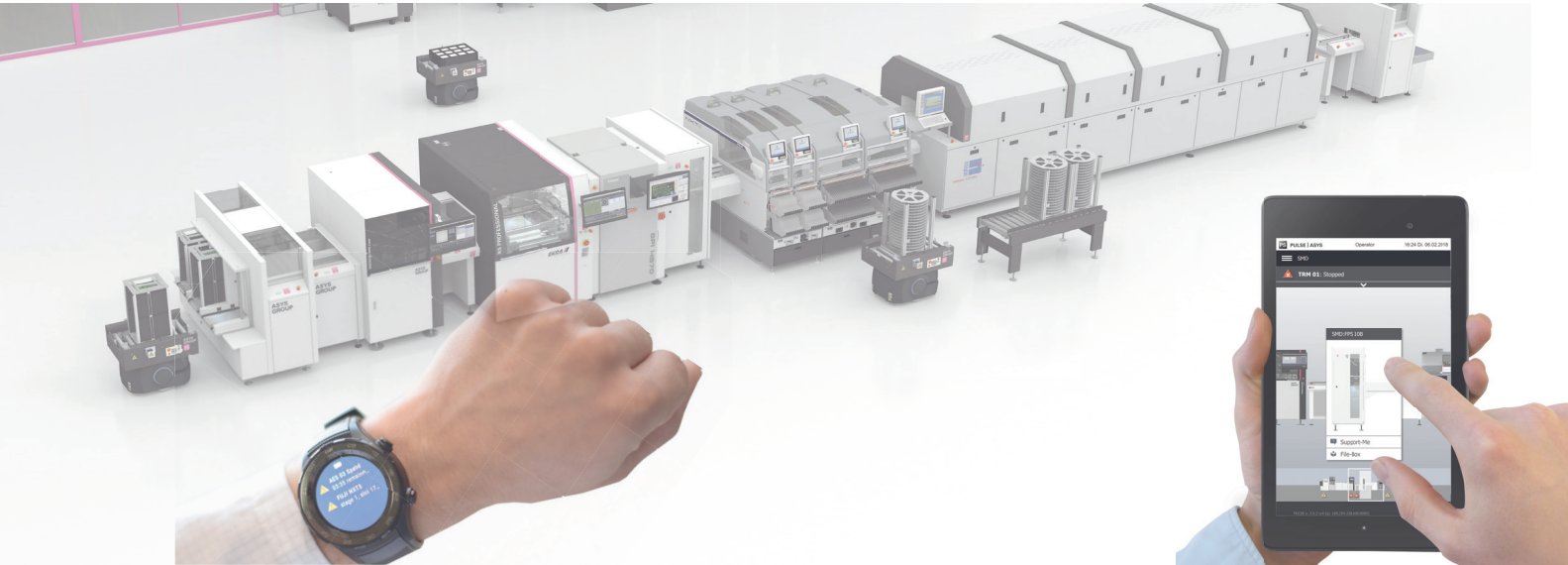**WITH THE ASYS GROUP SOFTWARE SOLUTIONS, THE SMART FACTORY IS ALREADY TURNING INTO REALITY TODAY.**

ASYS GROUP

ASYS GROUP
SOFTWARE SOLUTIONS

DISCOVER OUR POWERFUL SOFTWARE SOLUTIONS
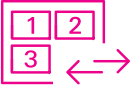
More than
100 **PULSE** lines
installed

Over
5,000 **MES**
connections
realized

More than
12,000 **Machines**
connected

Our goal is to support the human factor in the production and make rapidly growing complexity manageable. With our Software Solutions we are providing smart functionalities which is turning the vision of an intelligent factory into reality today.

The ASYS Software Solutions are the right choice for the whole factory: Everything can be connected with our interfaces and open standards.

ASYS SOFTWARE FUNCTIONS AT A GLANCE

Statistics

Optimize your production with statistical analysis

Page 8

Product Change

Product changeover for complete line by one click

Page 10

Notifications

Increase output by shortening micro stops with notifications on your wrist

Page 12

Messenger

Request specific support by using integrated messenger

Page 14

Monitoring

Keep control by overviewing of all lines

Page 16

Remote Control

Support operator by remote machine operation

Page 18

Program Preparation

Offline programming of machine programs on any computer for shortest NPI

Page 20

Material

Automate, control and trace all material flows and types

Page 22

OPEN INTERFACES AND CONNECTIONS TO ALL SYSTEMS

Factory Layer MES / ERP

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

Over **5,000** **MES** connections realized

ASYS GROUP
SOFTWARE SOLUTIONS

Supervisory Systems Layer

ASYS STANDARD INTERFACE

IPC CFX

Easy-Link   **iLNB**   **OIB**

MOTIVES SOFTWARE — Factory Conductor

M — Material Manager

OIC — Overall Inline Communication

PS — PULSE

Machine Layer

HERMES


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. We are experts in implementing connections and interfaces between different systems and offering the right Software Solutions.

For the connection of machines of various vendors we make use of our own powerful "ASYS Standard Interface". Additionally we connect to supervisory systems with interfaces like IPC/CFX or SEMI SMT-ELS.

On top of that the ASYS Software Solutions handle the connection to MES and EPR systems. We have implemented already more than 5,000 connections to all common systems and orchestrate your shopfloor with strong features of our Factory Conductor.
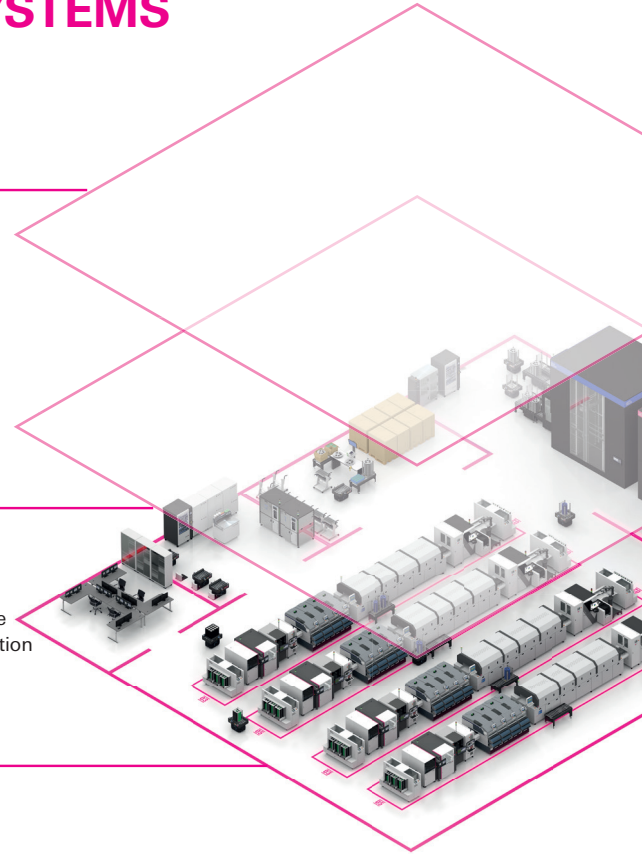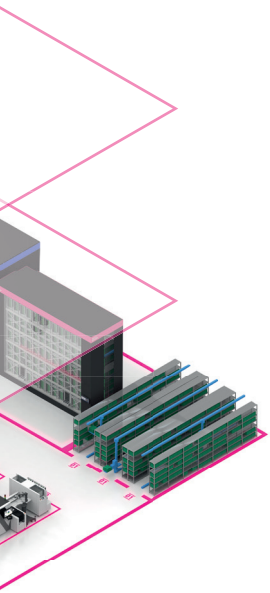
„We are the translator, the mediator, the machine connector - the last-named has always been in our ASYS DNA. From hardware topics such as our connecting transport module to today's networking using software solutions. We are increasingly focussing on this topic: Thanks to our open standard interface architecture, we can implement any required connection language and network all software modules – manufacturer independent. As pioneers, we are also open to new interfaces in the future. To this day we do not believe that there will be only one standard for data transmission in the future, as there will not be a world language in the coming decades. Therefore, we are adapting to the new standards, but also offer the promised functionalities today with our solutions. Thanks to our philosophy of openness, we are already able to connect a complete SMT line, even the entire shop floor."
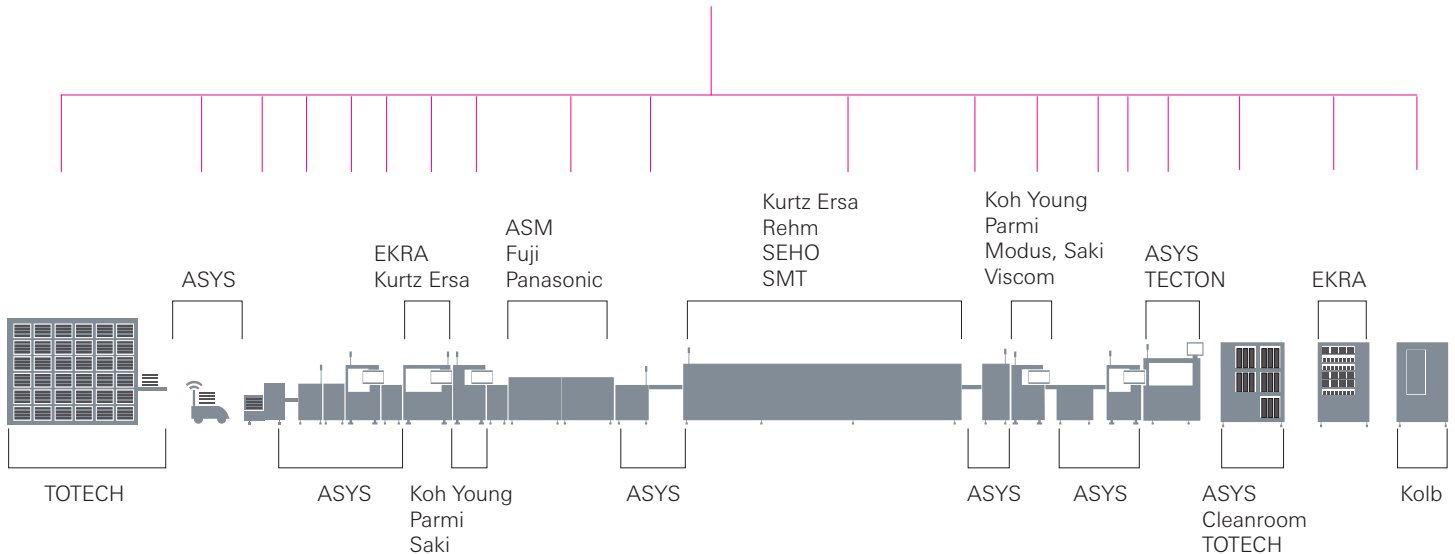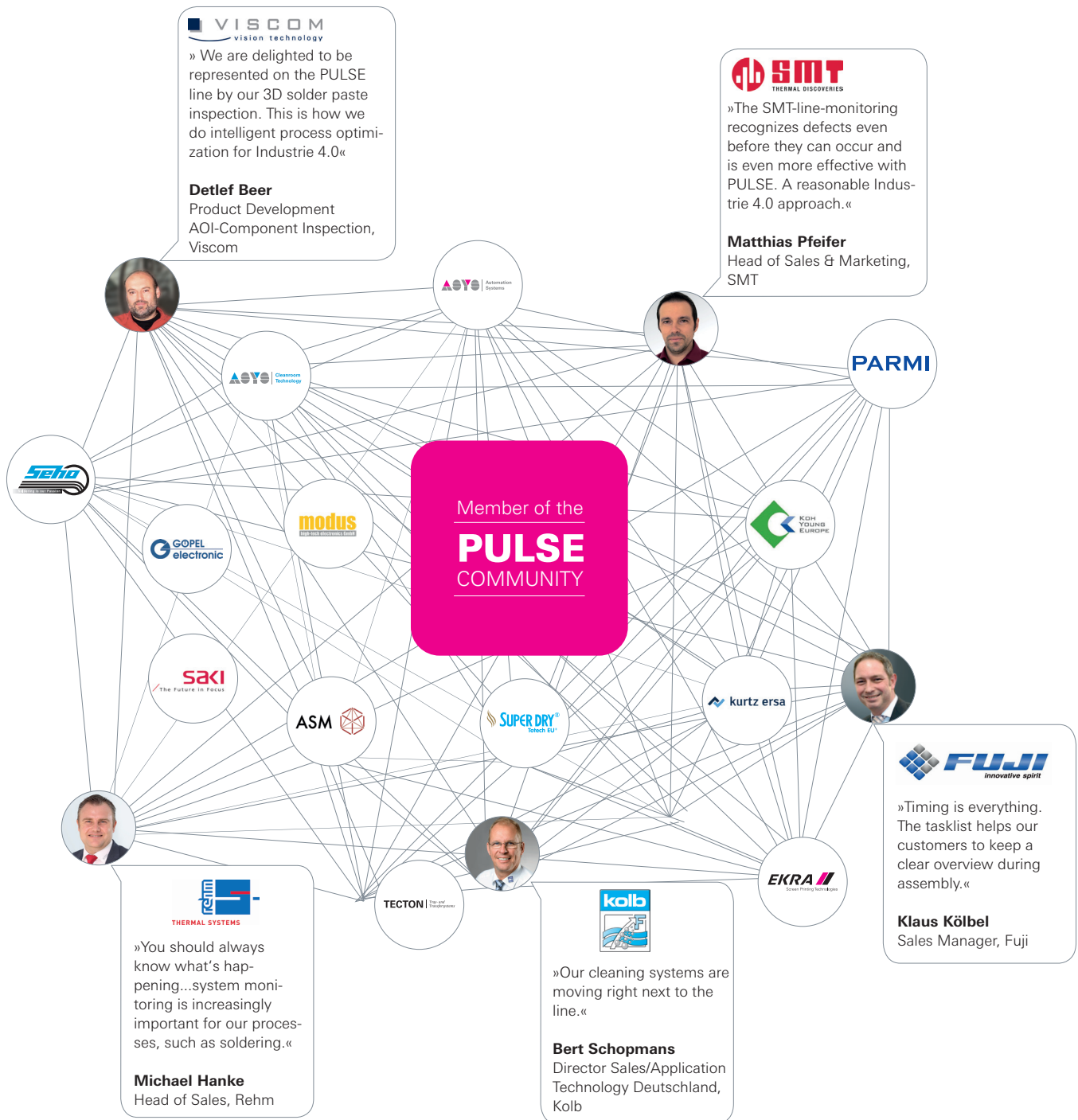
Senior Vice President Product Management & Marketing
Erwin Beck

› THE PULSE-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.

CONNECTED TO PULSE

ASYS

EKRA
Kurtz Ersa

ASM
Fuji
Panasonic

Kurtz Ersa
Rehm
SEHO
SMT

Koh Young
Parmi
Modus, Saki
Viscom

ASYS
TECTON

EKRA

TOTECH

ASYS

Koh Young
Parmi
Saki

ASYS

ASYS

ASYS

ASYS
Cleanroom
TOTECH

Kolb

VISCOM vision technology

» We are delighted to be represented on the PULSE 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

SMT THERMAL DISCOVERIES

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

Matthias Pfeifer
Head of Sales & Marketing,
SMT

ASYS | Automation Systems

ASYS | Cleanroom Technology

PARMI

Seho

modus high-tech electronics GmbH

KOH YOUNG EUROPE

GÖPEL electronic

Member of the
PULSE
COMMUNITY

saki The Future in Focus

ASM

SUPER DRY Totech EU

kurtz ersa

FUJI innovative spirit

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

Klaus Kölbel
Sales Manager, Fuji

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

TECTON | Tray- and Transfersysteme

kolb

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

Bert Schopmans
Director Sales/Application Technology Deutschland, Kolb

EKRA Screen Printing Technologies

› STATISTICS

Optimize your Production due to Statistical Analysis

Our Software Solution provides statistical analysis and helps to improve the production process. Planners and operators are able to locate possible bottlenecks and sources of error through evaluations of the machine and plant data. This optimizes the capacity utilization of the production.

› Statistics at a glance through visual display of cycle times of individual systems, standby times or set-up times

› Optimization of line utilization and line planning

› Supports planner and operator with software tool for evaluation of line performance

Bottleneck analysis:
Analysis of the material flow of all machines in a line

OIC
ASYS Software Solution
IC-Statistics
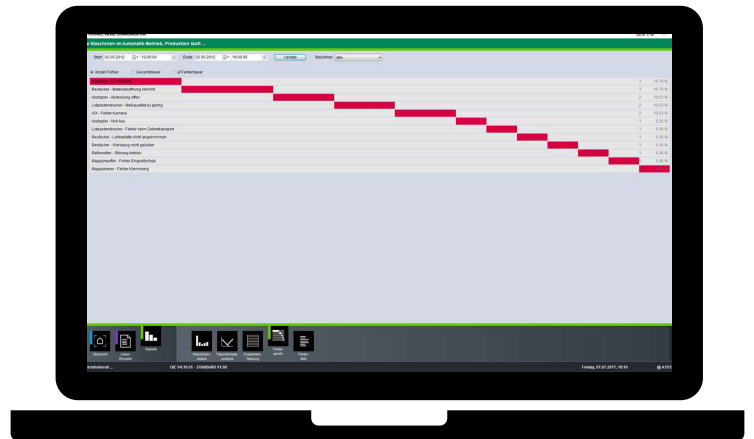
Error Pareto Analysis:
Central collection and analysis of error messages

› PRODUCT CHANGE
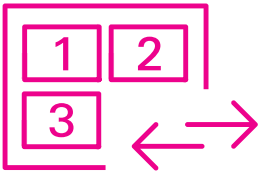
Product Changeover for Complete Line by One Click

Stop losing time on product changeover with our Software Solution. With just one click, the changeover is triggered. The parameters are sent to all machines in the line. All settings are stored in a global database and can be checked, modified and duplicated at any time.
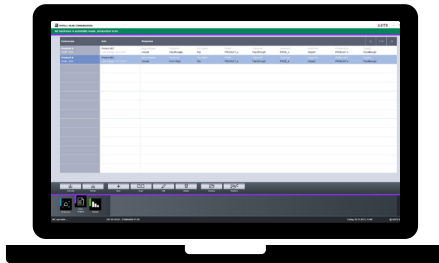
> Product change of a line in a few minutes

> Simple, controlled product changeover of the entire line

> Database with central product management and line control

> Integration of all ASYS Group machines as well as third-party systems

> Reuse of existing programs

OIC # ASYS Software Solution
IC-Run

> Simple creation of line recipes, editing of VEGO Dynamic programs

> Faster NPI compared to programming on individual systems

> Avoidance of conversion errors
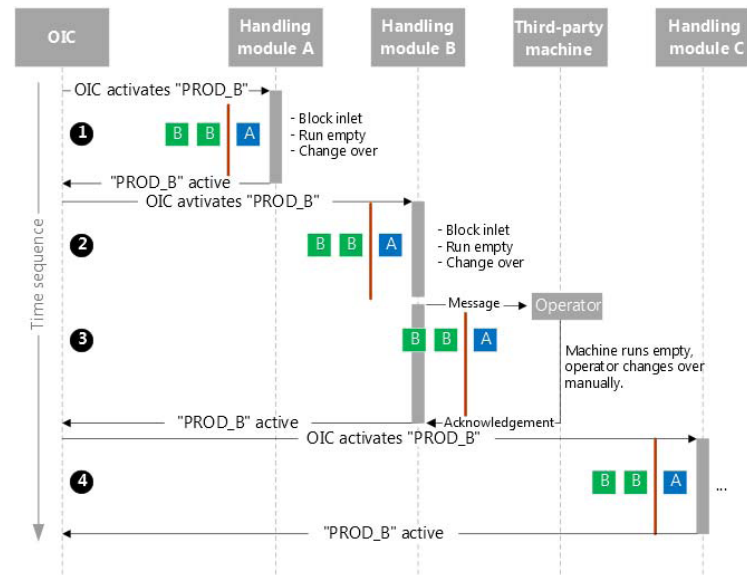
› **MESSENGER**
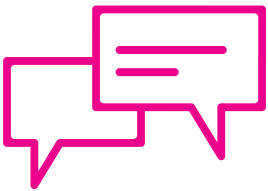
Request Specific Support
by Using Integrated Messenger

The PULSE Messenger is an extensive chat application
in our system for the communication among employees
in the factory. It enables a multitude of possibilities for
the usage. Tasks can be distributed faster and operators
can easily request help. The messenger is flexibly
usable on PC's and Smartwatches.

› Save walking routes with integrated messenger

› Request help from supervisor

› Send tasks from central station to operators at the line

› Determination of which operator takes over a task

Please check board!

› Yes

› No
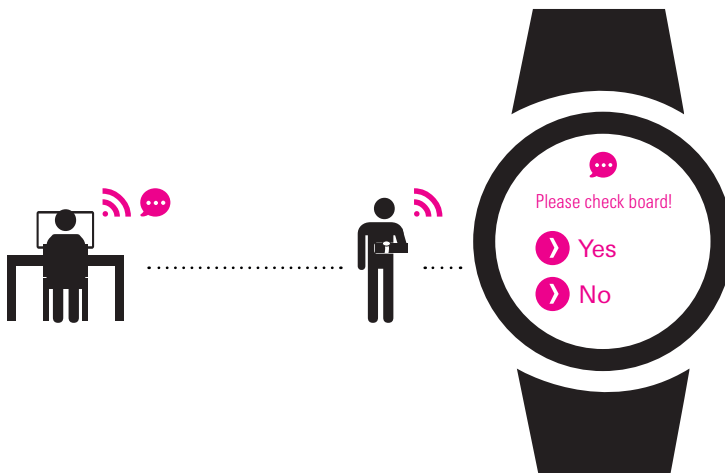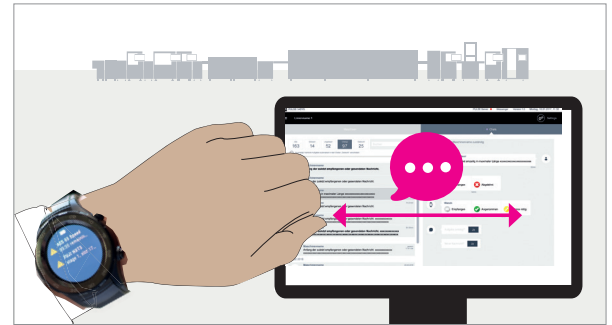
› Fast communication among employees through messages via PULSE smart watches

› Universally applicable

› Replying to messages with PULSE smart watches

› Storage of message histories

PS **ASYS Software Solution**
PULSE Messenger

› NOTIFICATIONS

Increase Output by Shortening Micro Stops with Notifications on Your Wrist

The primary goal of smart assistance systems is, to support operators in their daily work. Intelligent data transmission helps to react immediately and prevent machine stops.

> Receive notifications from all machines in the line

> Avoid unnecessary stops with pre-warnings of empty material

> Reduce reaction time with an immediate notification

> Clear assignment of interruption and guidance for the operator
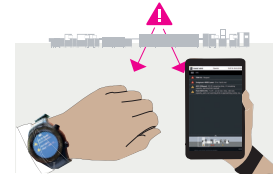
PS **ASYS Software Solution**
PULSE Alerts&Info

Customization and Optimization of Notifications

> Optimization of the visual and haptical feedback of a notification

> Blocking of notifications not required

PS **ASYS Software Solution**
PULSE Alert Manager

> Optimal planning of employees at the lines

> Clear allocation of responsibilities
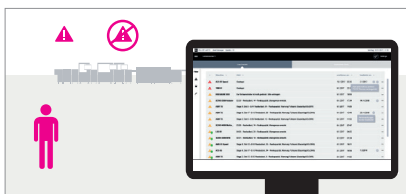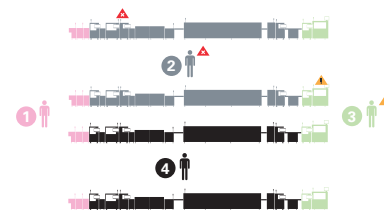
PS **ASYS Software Solution**
PULSE User2Machine

› MONITORING

Keep Control by Overviewing all Lines

The ASYS Software Solutions offer a variety of monitoring options to keep track of all connected machines. The operator always knows what is going on in every situation. All for the purpose of keeping production running and increasing productivity. Discover our various functionalities for machine monitoring.

> Live video on PULSE devices

> Free placeable camera

> Monitoring of critical processes
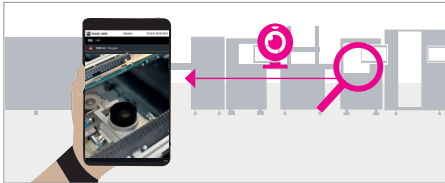
PS **ASYS Software Solution**
PULSE Live-View

> Service information can be requested

> E.g.: Serial number of the machine,
  ASYS support hotline and software version
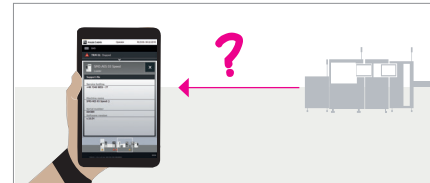
PS **ASYS Software Solution**
PULSE Support-Me

> Centralized access to machine specific
  documents on mobile devices

> Documents can be supplemented
  and extended
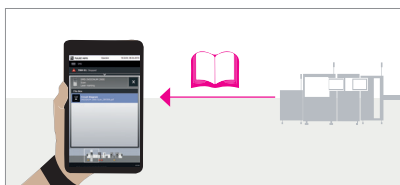
PS **ASYS Software Solution**
PULSE File-Box

> Software shows the number of all currently
  produced products in relation to the target
  and minimum throughput

> Monitoring tool directly at the production
  line or in the office

OIC **ASYS Software Solution**
IC-Performance
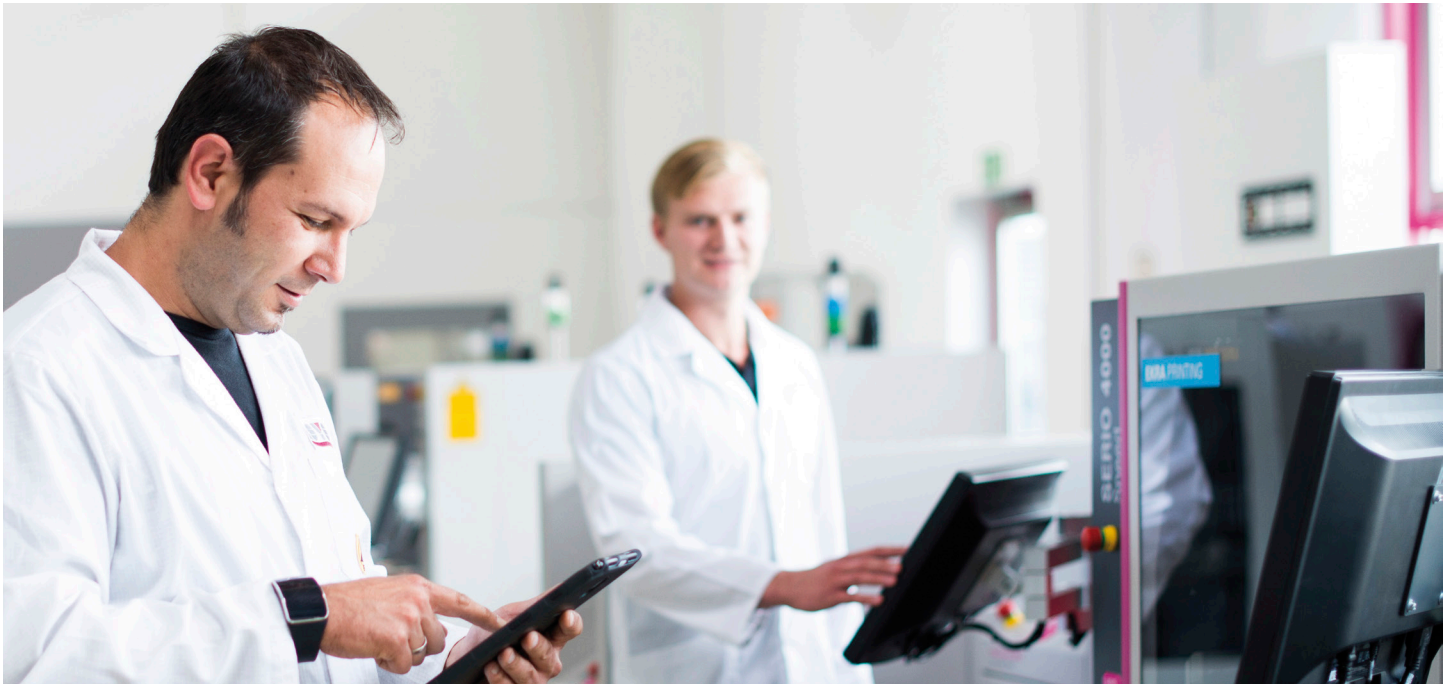
› REMOTE CONTROL
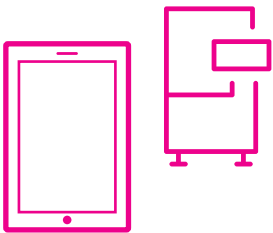
Support Operator by Remote Machine Operation

The user interface of machines can be displayed on tablets and PCs. It allows you to operate and monitor machines regardless of their current location. This is a powerful support for the operator on the line. The machines can be operated from the back. These functions are protected by user authorization.

- Access control panel of the machine on Tablets and PC

- Secured operation with user authorization

- Support operator with remote assistance

- Operate machine while standing at back side
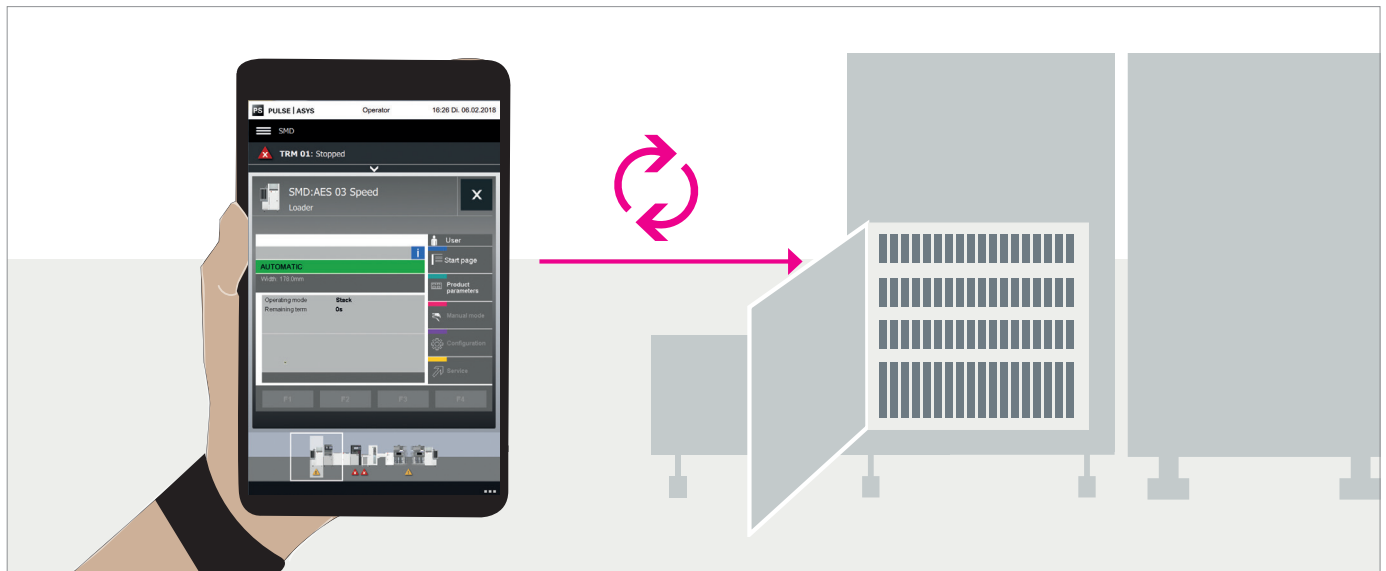
ASYS Software Solution
PULSE Operation

› PROGRAM PREPARATION

Offline Programming of Machine Programs on any Computer for Shortest NPI (New Product Introduction)

With the ASYS Offline Programming Tools the machines can be programed during the operation. This significantly reduces downtimes during the production.

- › Offline programming during production

- › No production shutdown

- › No multiple programming required

- › Can be installed on any PC
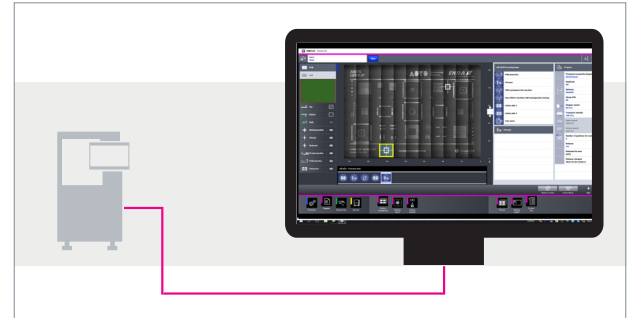
ASYS Software Solution
INSIGNUM Offline Programming Tool
DIVISIO Offline Programming Tool

- › Share data by one data source for all INSIGNUM systems

- › Connection to MES possible

ASYS Software Solution
INSIGNUM Product Pool

› **MATERIAL**

Automate, Control and Trace all Material Flows and Types

More transparency and efficiency in the electronics manufacturing. The ASYS Material Software provides you with a modern, web-based and modular product platform that takes your quality management to a new level.

Registration of Material Filling Level Control Component Monitoring
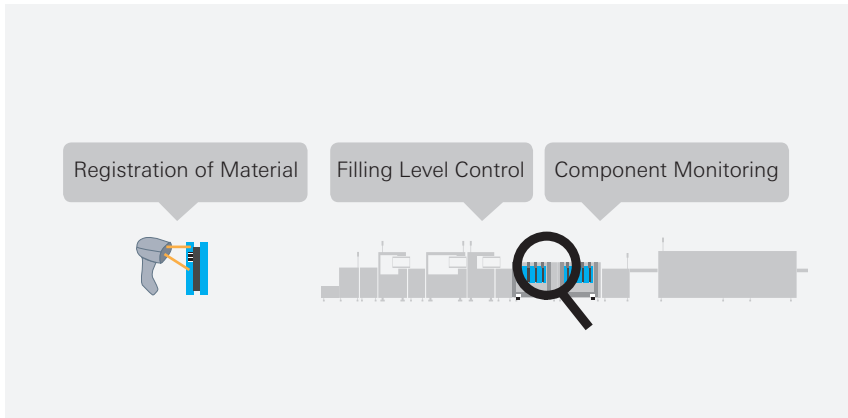
› Order/production detail planning: e.g. definition of an order sequence, rescheduling

› Calculation of the material requirements for x-orders

› Comparison of required material for x-orders to the current filling level

› Preparation of picking orders for the warehouse

› Starting of production orders, that are finalized in the set-up preparation area

› Registration of reels at the line: Unique ID, filling level and more

› Registration of changes in the filling level at the pick-and-place process

› RFID or AIVs integrable into process

Definition of Order Sequences

Calculation of Material Requirements

1200 pcs.

Picking Order from the Warehouse

600 Stk.

Starting of Production Order

Registration of Reels at the Line

600 pcs.

Individual Reorder of Material

(M) **ASYS Software Solution**
Material Manager
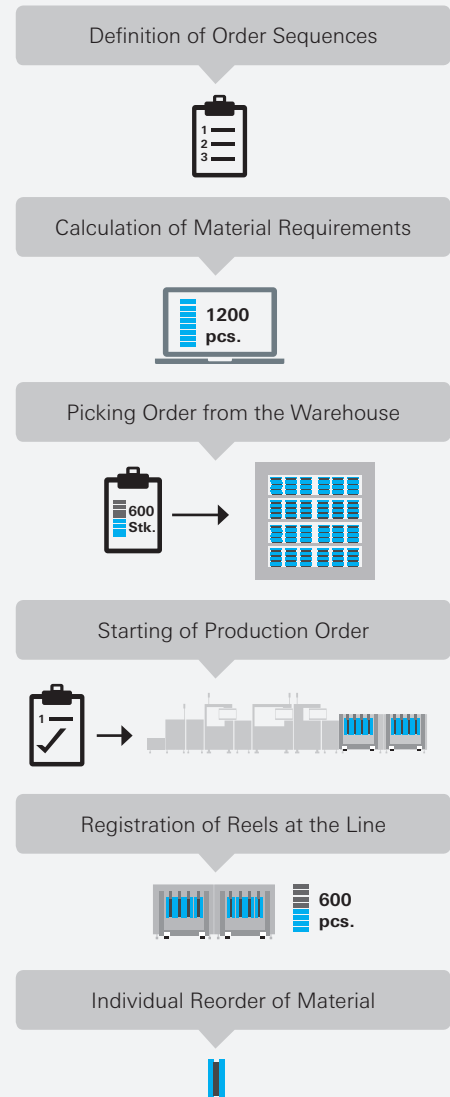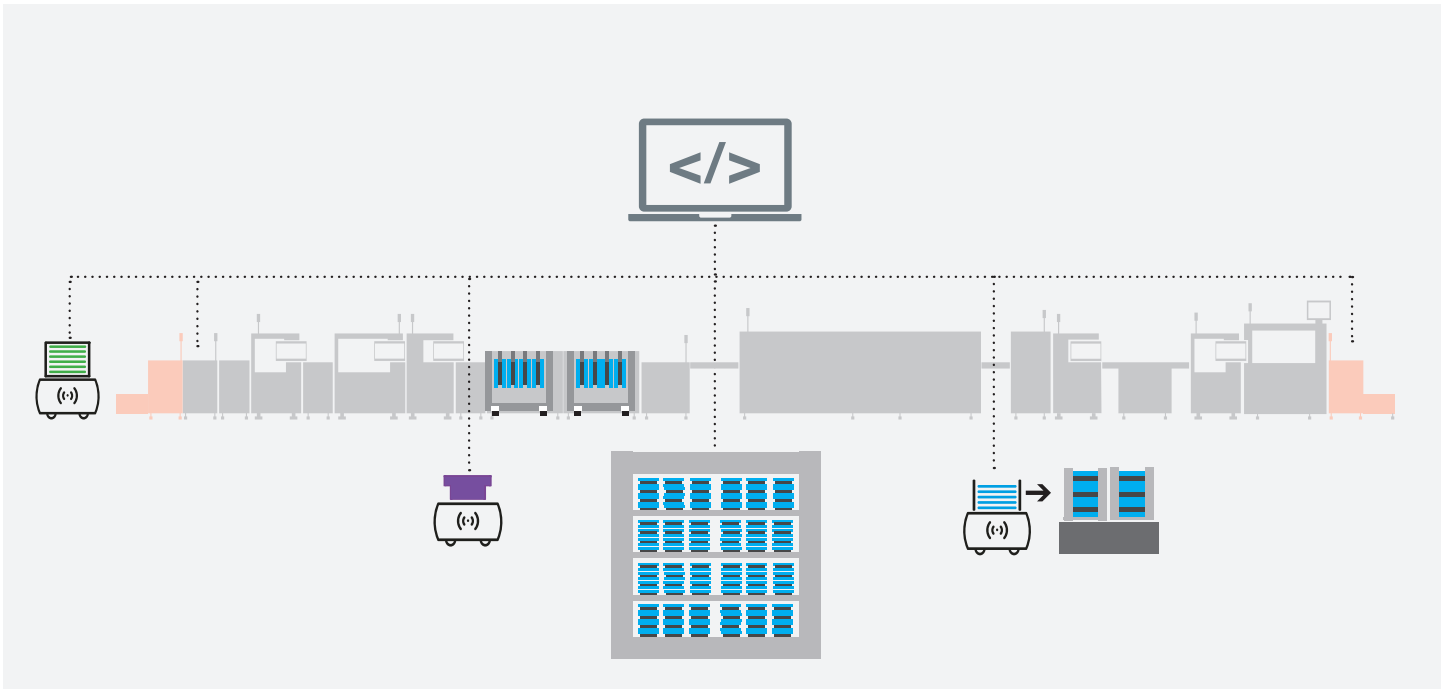
M **ASYS Software Solution**
Logistic-Package

> Integration of all logistic modules

> Status determination of all stations

> Machine connection

> Fully integrated material supply

ASYS Software Solution
Fleet-Manager

Charge Management

MES

Job-Allocation

Charging Station

Transmission of Updates
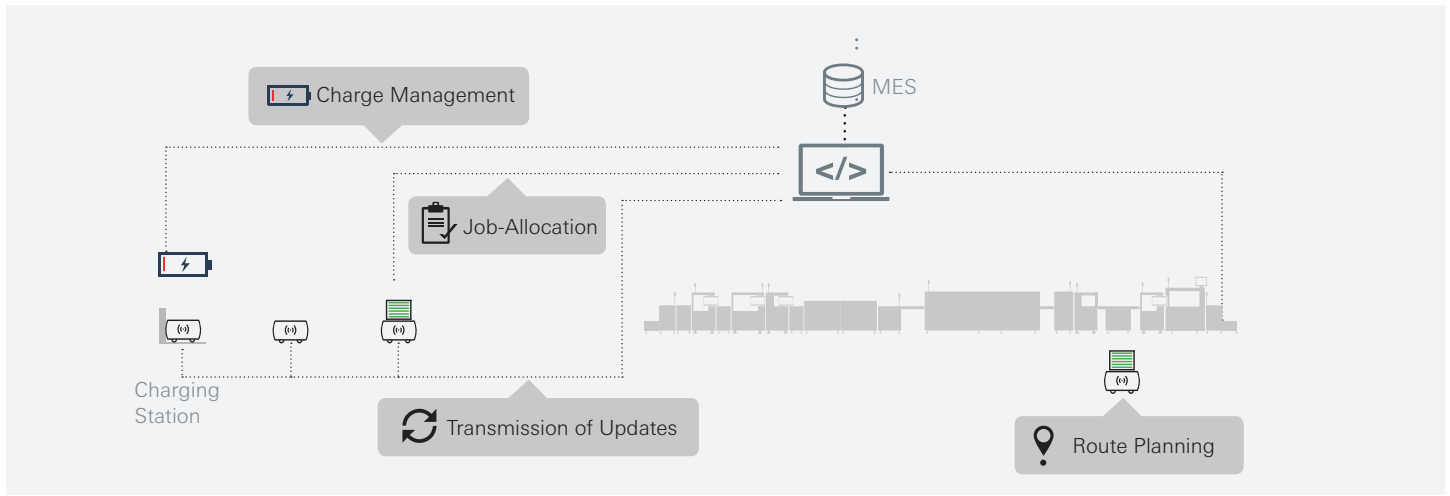
Route Planning

Route Planning
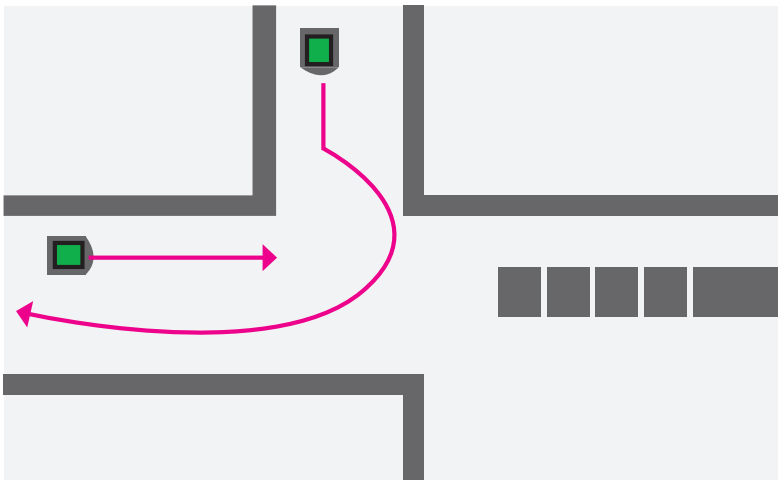
› Coordination of AIV-fleets, planning of traffic flows for an optimized loading and unloading

› Allocation of jobs, administration of „skills" and transfer of tasks to a suitable equipped AIV

› Charge management

› Transmission of updates for the entire fleet

M **ASYS Software Solution**
MSL-Manager

Registration of Storage/Dispensing
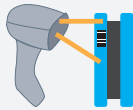
Monitoring of Cabinets

> Cabinet monitoring: monitoring of humidity and temperature, data management of several cabinets, cabinet identification

> Monitoring of components: registration of storage and dispensing, calculation of floor-life-time, documentation of the drying process

> Component logistics: localization of components, traceability of all stock movements, providing information about unused material

ASYS Software Solution
MES-Package
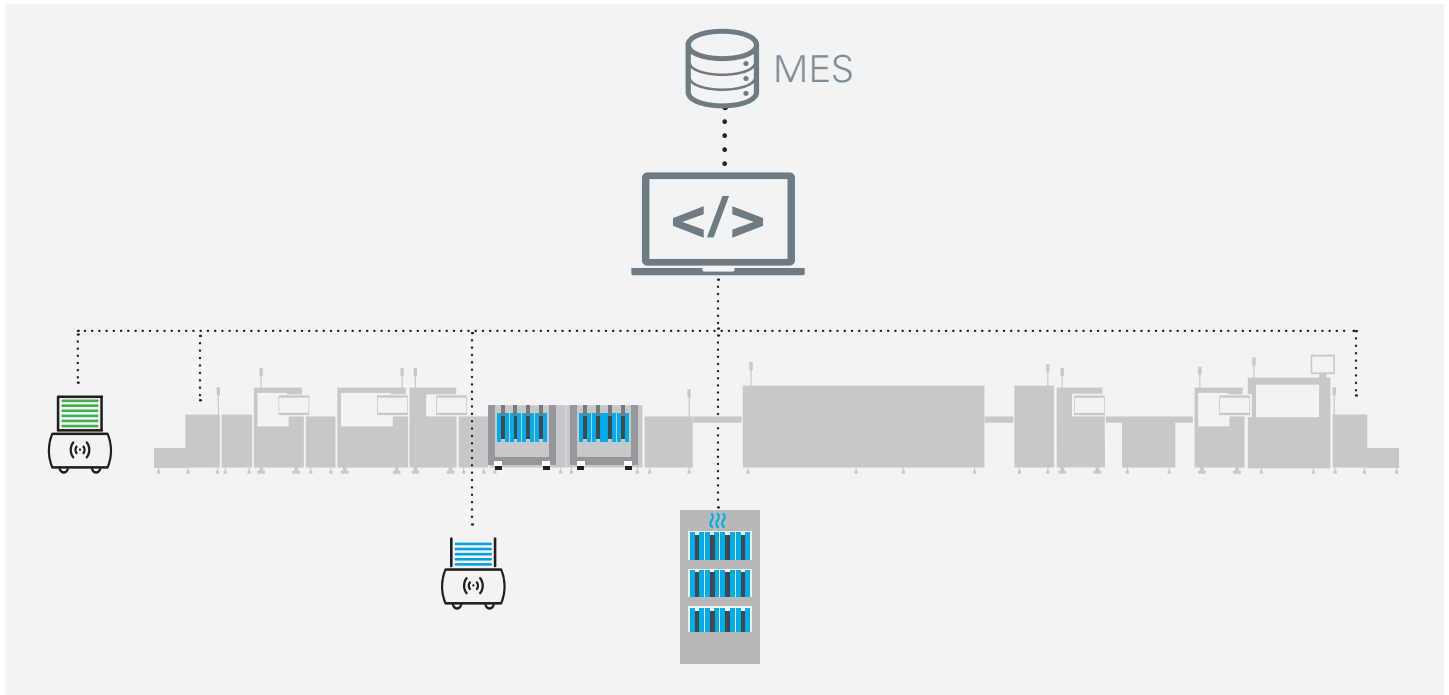
> Interface for connection to higher-level software systems (e.g. MES, ERP and other 3rd party systems)

> Standard interface or customer specific configuration

> Seamless communication

ASYS SOFTWARE SOLUTIONS AT A GLANCE

Function		Software Solutions	Description	Devices			
Statistics		OIC IC-Statistics	Statistical analysis of production			💻	
Product Change		OIC IC-RUN	Automatic product changeover of a whole line			💻	
Notification		PULSE Alerts&Info	Informations, Warnings and Errors from machines	⌚	📱	💻	▭
		PULSE Alert Manager	Modification of machine alerts			💻	
		PULSE User2Machine	Allocation of machines to users			💻	
Messenger		PULSE Messenger	Complete messenger for communication in factory	⌚		💻	
Monitoring		PULSE Live-View	Freely placeable camera with live stream to tablet or PC		📱	💻	
		PULSE Support-Me	Access to machine service information		📱	💻	
		PULSE File-Box	Storage and access for all types of documents			💻	
		OIC IC-Performance	Overview of current throughput			💻	▭

Function	Software Solutions	Description	Devices		
Remote Control	PULSE Operation	Locally independent remote control of machine		📱	💻
Program Preparation	INSIGNUM Offline Programming Tool	Offline programming for INSIGNUM marking systems			💻
	DIVISIO Offline Programming Tool	Offline programming for DIVISIO depaneling systems			💻
	INSIGNUM Product Pool	Share data by one data source for all INSIGNUM systems			💻
Material	Material Manager	Consumption-oriented material management			💻
	Logistic Package	Integration and connection of all modules for the autonomous transport			💻
	Fleet Manager	Organisation and distribution of tasks for the AIV´s			💻
	MSL Manager	Monitoring and tracing the floor-life-time of moisture-sensitive components			💻
	MES Package	Interface for connection to higher-level software systems			💻

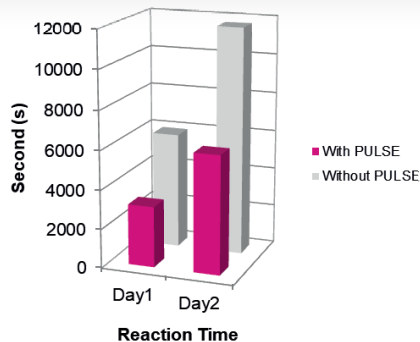| Battery Lifetime up to 16h *Battery lifetime fo PULSE smart watches in running production	PULSE Smart Watch	PULSE Tablet	Desktop PC Windows 7 or higher	Line Monitor

PULSE at Katek

Georg Fahringer, Technical
Officer at Katek,
with Wolfgang Heyder, Sales
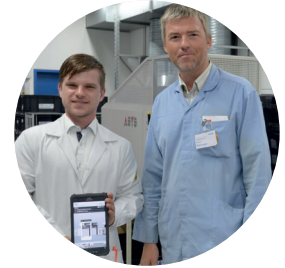Engineer at ASYS
(from the right to the left)

At Katek, PULSE has meant fewer machine stops and therefore increased line productivity. 40% of employees are using the PULSE smartwatch. The Bavarian electronics service provider recognized the benefits of PULSE early and therefore opted its production for the solution from the start.

Katek is using PULSE to solve the challenge of microstops on the production line. Its own system only generates an error message after five minutes at a standstill, so microstops often fall through the net. PULSE is able to catch and reduce the number of microstops.

ASYS will continue to provide support for the PULSE lines at Katek and monitor developments in production. The PULSE system may be extended to the remaining three production lines in the future, and the package will definitely be installed if production lines have to be replaced.

With Notifications: Reaction Time reduced by 48%

One of our customers has evaluated the ASYS PULSE Mobile Devices. He compared the performance of his production line with and without support of smart assistance systems.

The result was obvious: The time between the occurrence of an error and the reaction to it could be reduced by 48% on average. The figures were convincing - the customer will continue to use the smart ASYS solutions to increase the productivity of his production.

Reaction Time

Legend: With PULSE, Without PULSE

Further Customer Feedback

Which experiences did you have with PULSE during running production?

We could reduce walking routes of our employees by more than 30% per shift.

We could reduce response times to warnings and alerts considerably.

We could reduce response times to warnings and alerts considerably.

The use of smart watches reduces stress and enables to concentrate on the most important tasks.

SUCCESSFUL – AWARDS FOR ASYS

Innovation Award IT
Initiative Mittelstand – "BEST OF" award in the Industry & Logistics category

Productronica Innovation Award
Productronica exhibition in cooperation with the „productronic" magazine – Best future-oriented product innovation in „Future Markets Cluster"

Industrie 4.0 Innovation Award
VDE VERLAG in collaboration with ZVEI – among the top 10 Industry 4.0 innovations

100 places to see Industry 4.0 in Baden-Württemberg
Allianz Industrie 4.0, Baden-Württemberg – Industrie 4.0 commitment

FUTURE MARKETS CLUSTER

TRANSFORMING IDEAS

AUTOMATE,
DIGITALIZE
& CONNECT

**Become a
PULSE-Member!**

ASYS
GROUP