



**PIA** AUTOMATION

NEW WAYS OF OPTIMIZATION

# piaOptimum

Application for bottle-neck detection and process optimization in complex inter-linked assembly lines.

PIA 4.0 - MAKING BIG DATA SMART





piaOptimum

## DISRUPTIVE TRANSPARENCY FOR NEW WAYS OF OPTIMIZATION

Industry 4.0 enables revolutionary ways for maintenance and optimization of manufacturing and assembly assets. With piaOptimum it is now possible to take this next significant step: The service and optimization tool has been developed to collect automatically produced data from assembly lines, combined with user input data, to enhance the Overall Equipment Effectiveness (OEE). This approach is new, since the analysis and evaluation methods of the production data consider both human and machine influences – on the input as well as on the output level.

Among other information sources, sub cycles are used to identify the most relevant OEE losses: Collecting durations of individual movements inside the machines allows identification and categorization of performance losses in comparison with respective reference values. The way these individual movements can be configured in piaOptimum is revolutionary, since no adaption of the PLC software whatsoever is necessary. Simply using the web interface (GUI) enables flexible configuration of any relevant cycles and sub cycles. Hence the regions of interest for optimization and maintenance can be supervised on-site or by a service technician, using remote access. This functionality enables effective “assembly sequence comparison” using continuous controlling and intuitive analyses; thus the user is offered full transparency of sequence changes and a reliable identification of most relevant OEE losses.

### BENEFITS

- „One stop“ solution: PIA Automation offers the overall package
  - Assembly line,
  - Analytics software and
  - Optimization service
- Flexible data access using OPC-UA
- Edge Computing directly in the assembly line or factory
- Revolutionary level of detail regarding the analysis of lines and stations down to individual movements
- Features like knowledge database, message service and top losses

### DESCRIPTION

Application for bottle-neck detection and process optimization in complex inter-linked assembly lines

The tool purpose is the fast but sustainable optimization starting from individual stations' performance, over line segments, and up to entire assembly lines

Flexible data access to all existing PLC units empowers a revolutionary way of data evaluation

- Process data
- Machine data
- User inputs

Comprehensive analytics, intuitive visualization and high usability facilitate the daily tasks of line operators and system optimizers



## APPLICATION POSSIBILITIES OF piaOptimum

### SYSTEM SETUP

- (If required) Upgrade of equipment hardware & software
- Installation of PIA Factory Agent („data collector“) within the assembly line network
- Configuration of data connection & standard analytics by PIA technician
- Training and guidance of customer staff

### CONTINUOUS ANALYSIS

- Option: „Do-it-yourself“-analytics performed by operator
- Option: Analytics performed by PIA Analysis Team
  - Analytics of piaOptimum data performed by a PIA Analyst
  - Identification of possible root causes by PIA-Analysis-Team for the top issues
  - Cyclic and continuous (monthly, quarterly) presentation of detailed results

### OPTIONAL OPTIMIZATION

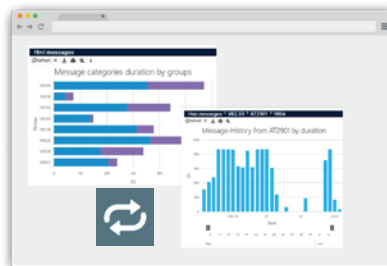
- Based on detailed analyses, measures for optimization proposals containing timelines and responsibilities will be suggested
- Quotation and implementation of optimization measures performed by PIA Automation

## piaOptimum OFFERS NUMEROUS FEATURES AND STATISTICAL EVALUATIONS



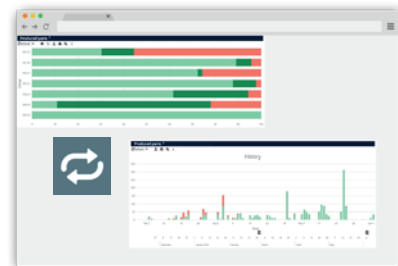
### SUBCYCLE STATISTICS

- Monitoring and tracing of all changes in subcycle sequences
- Comparison possibility to ideal cycle references (e.g. state of acceptance)



### STATISTICS OF ALARMS & WARNINGS

- Monitoring and tracing of all alarms & warnings
- Detailed evaluation regarding amount and duration including information of every single event



### STATISTICS OF PRODUCED PARTS

- High level of detail regarding the analysis of lines and stations
- Comfortable filtering options, e.g. by part types
- Detection & KPI adjustment of reworked parts



PIA Automation is your strong partner for the design and implementation of sophisticated assembly automation systems in the mobility, commercial and consumer goods, medical technology and pharmaceutical sectors.

At its locations in Germany, Austria, Croatia, China, Canada and the US, PIA Automation offers a mature range of products and solutions for assembly and automation systems as well as reliable worldwide service.



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