DI.IT

Leading software solutions for wiring harness production

Production Plan Generation (PPG)

PPG - Production Plan Generation

A Comprehensive Software Solution for Wire Harness Engineering

PPG - experience over 25 years

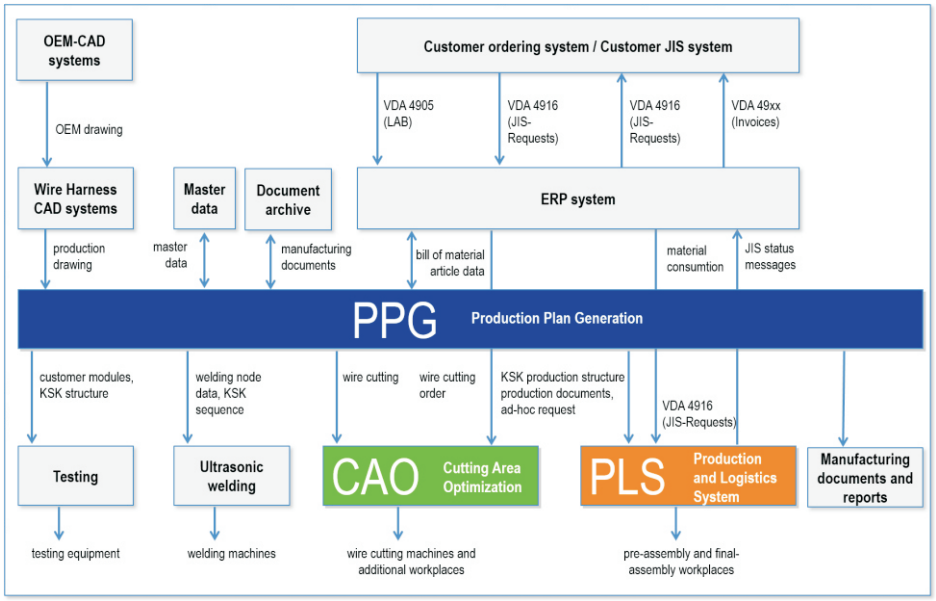
PPG is a comprehensive software solution for wire harness engineering to create production documents automatically.

From the engineering drawings, PPG generates production modules in rule-based fashion with bill of materials, work plans and operating instructions.

PPG supports your complete manufacturing chain, from cutting to final assembly, for lot and customer-specific production of wiring harnesses inclusive of JIT/JIS process implementation.

Rule based generation

A powerful set of rules manages the generation of production modules. The existing basic rule set can be adapted flexibly to your production method. Therefore, PPG generates optimized production modules related to your production.



Picture 1: process chain for KSK-specific production

Your intellectual property

To protect your technical knowledge, the set of rules is capsuled and exclusively delivered to your company.

Multi-client capability

The multi-client and rights management of PPG ensures that each production division sees only its own data and each employee is only allowed to execute his approved functions.

Process chain

PPG integrates in an IT-based process chain (picture 1) process design and MES systems in production and logistics, as well as supporting disposition processes in ERP systems.

Drawings and form boards

As a standard, PPG supports VDA KBL formats with customer-specific extensions, as well as various other drawing and OEM system formats.

ERP systems

With various ERP systems (including SAP), ERP has a bidirectional synchronization of all articles - purchased parts, modules and variants - integrating dispositional processes in ERP.

JIT-process for KSK-production

In the JIT-process for KSK-production, PPG takes over delivery call offs, tests the buildability of vehicles based on rules, and generates new production documents.

Production modules generation

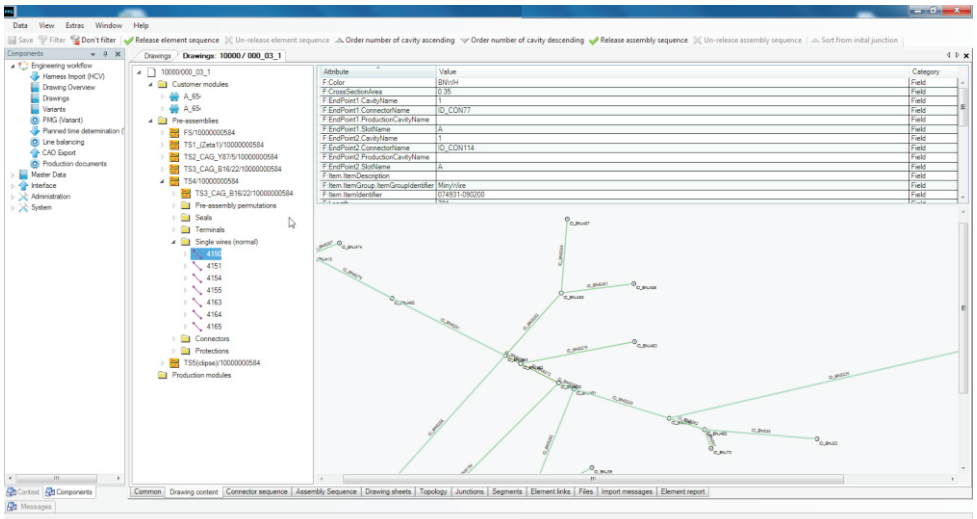
For prototypes, families of vehicles (150%-drawing) and customer-specific vehicles, PPG generates rule-based production modules.

Cutting area

PPG generates and provides cutting data for the cutting area, for instance DiIT's CAO, the MES system for Cutting Area Optimization.

Generation of cutting modules (lead sets). Recognition of lead set sequences and complex lead sets.

- Single-, twisted-, multiwire wires
- Double crimp
- Splices
- Wire chains
- Complex special wires



Picture 2: wire harness, content and topology

PPG V4 TECHNOLOGY

CLIENTS IN .NETS TECHNOLOGY

- Multi-lingual, easy to use with interactive graphics and drag-and-drop
- Tabbed data views can be rearranged, undocked an placed flexible
- Adjustable window size will be recovered at program start

SQL DATA BASE

- Easy access with freely available tools
- Suitable for large amounts of data

PPG - Benefits

Assembly area

PPG generates and transfers order structures of customer and production modules as well as production documents to the production control system, for instance DiIT PLS. For manual production areas, the production documents can be printed.

Generation of pre-assembly and assembly modules

- Connector and welding node modules
- Assembly modules
- Pre-assembly modules
- Final assembly modules

Work plan generation

For the different levels of production, such as cutting, pre-assembly and assembly, PPG automatically generates detailed work plans for every work place with textual and graphical work instructions.

Calculation

PPG enables bid calculation based on customer modules, and production calculation based on production modules. For your specific method of calculation, PPG standard calculation can be supplemented by your own scripts.

Manufacturing documents

PPG generates your manufacturing documents and reports. The generation is based on a flexible report engine. Therefore, the documents are highly adaptable to your needs.

Different production methods

PPG supports different production methods on wire harness level, e.g. wire-by-wire, module production, line production, single side production.

Production variants

PPG generates BOMs and work plans for different types of production. Each plant uses its preferred type and can optionally switch to a different version.

Assembly-suitable modules in KSK mode

PPG enables the formation of assembly-suitable modules in KSK-mode with components from multiple customer modules.

Wire harness with length variants

PPG considers length variants in the generation of new modules. So, high variation JIT/JIS processes can be implemented quickly and without compromises.

For over 10 years, PPG shows this successfully in the commercial vehicle sector.

Plausibility checks for customer specific wire harnesses in the JIT/JIS process

PPG supports automated plausibility checks for each vehicle. This increases the speed and safety in the JIT / JIS process.

Reduce processing time

PPG provides unified, integrated, automated processes and integrates the engineering in the JIT / JIS process.

Throughput time in engineering will be significantly reduced and production documents in the JIT-controlled production process for customer-specific wire harnesses will be provided much faster.

Reduce expenses

PPG generates production plans automatically. Manual, highly specialized post-processing is drastically reduced. Significant reduction of time and effort in work preparation.

Improve quality

PPG generates uniform production plans.
The typical errors caused by manual data entry, multiple entry and creation of workflow descriptions omitted. No more errors due to multiple data entry in manual process.

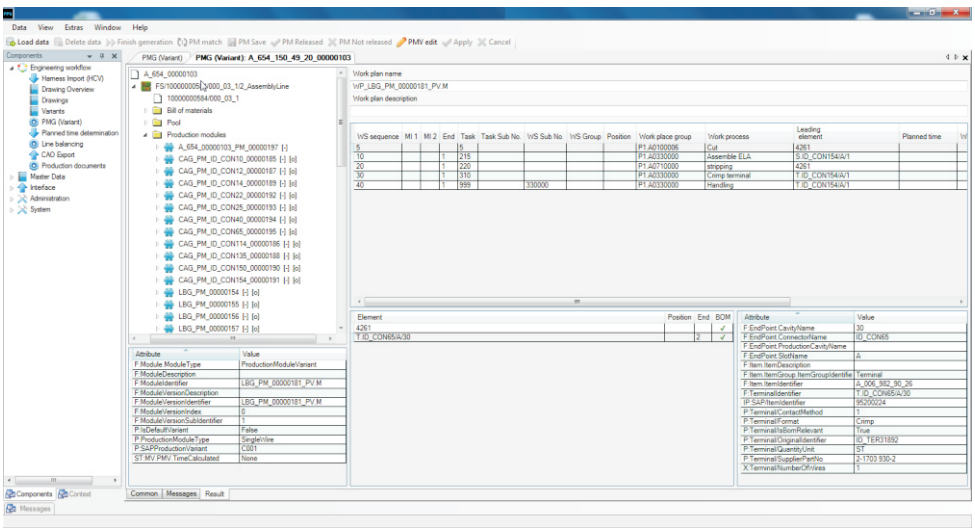
Increase safety

PPG generate production plans according to clear rules and performs extensive consistency checks in the JIT / JIS process.

Consistent data administration is the result of the integrated IT-based process chain.

Conclusion

With PPG, different manufacturing concepts can be quickly, safely and flexibly implemented in a way optimized for production.



Picture 3: production module generation

PPG V4 EDITIONS

PPG 4 - CUTTING AREA

- The basic edition supports all functionalities of the cutting area for batch size wire harnesses

PPG 4 - ASSEMBLY AREA

- This edition extend the basic edition. It supports in addition all functionalities for the pre-assembly and final assembly

PPG 4 - KSK PRODUCTION

- This edition supports the KSK-specific wire harness production. It includes the cutting area and assembly area

DI.IT

Complementary Systems

Cutting Area Optimization CAO

The software solution Cutting Area Optimization (CAO) is the leading manufacturing execution system for the cutting area and pre-assembly. It is the only system, that is distributed worldwide and in all languages.

The system has interfaces to machines from Komax, Schleuniger, Schäfer, ShinMaywa and others, that are continuously updated in close co-operation with the machine manufacturers. That is why CAO has the latest and the largest scope of functions that can be regarded as a de facto standard.

The software solution CAO is flexible, scalable and efficient and already successfully installed by many successful companies. Due to its modularity, CAO is also beneficial for small and medium-size companies.

CAO controls any cutting area between 2 to 200 machines and meets the highest requirements. Its extension functions adapt flexible to the needs of companies. Optimization, machine and control interfaces are realized elegantly, reliably and cost-efficiently in CAO.

Production and Logistics Suite PLS

PLS is a flexible solution specially made to support customer specific wire harness production (KSK).

Production processes are complex and different in every company contrary to commercial functions, especially in wire harness production with quantity one. Therefore, PLS functionality depends on the project at hand. There are no unnecessary, missing or convoluted functions in PLS.

Since 1990, DiIT develops software modules that are part of a standard package. The modules have been proven and tested hundreds of times and can be used in any combination. Customizations and new objects can be implemented reliably in very short time and with little effort.

Customer specific data structures are generated automatically with no extra effort. This software technology was funded by the European Commission and has been awarded with the highest award category “excellent”.

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