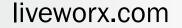




INTEGRATE EPLAN AND WINDCHILL - A COOKING RECIPE FOR SUCCESSFUL COLLABORATION

Arnd Paulfeuerborn
EPLAN Software & Service, Director PLM Competence Center





- EPLAN introduction
- ☐ Electrical design as part of the digital product definition
- ☐ EPLAN Windchill Integration
- ☐ A plan!



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FOR MORE THAN 30 YEARS: SOLUTIONS FOR EFFICIENT ENGINEERING



Continuity

- Successfully established since 1984
- HQ in Monheim am Rhein, Germany
- Top Employer since 2009 (Top Employer Institute)

Investment security

- Together with the Friedhelm Loh Group (F.L.G.), more than 11,500 employees worldwide
- F.L.G. owner-managed by Friedhelm Loh



International presence

- Present in more than 50 countries
- EPLAN solutions in 17 languages
- Support of global standards

Global success

- 45,000 customers
- 110,000 installations (01/2015)

Employees

- More than 700 employees worldwide
- Expanding in all countries

ABOUT 45,000 EPLAN SATISFIED CUSTOMERS AROUND THE WORLD











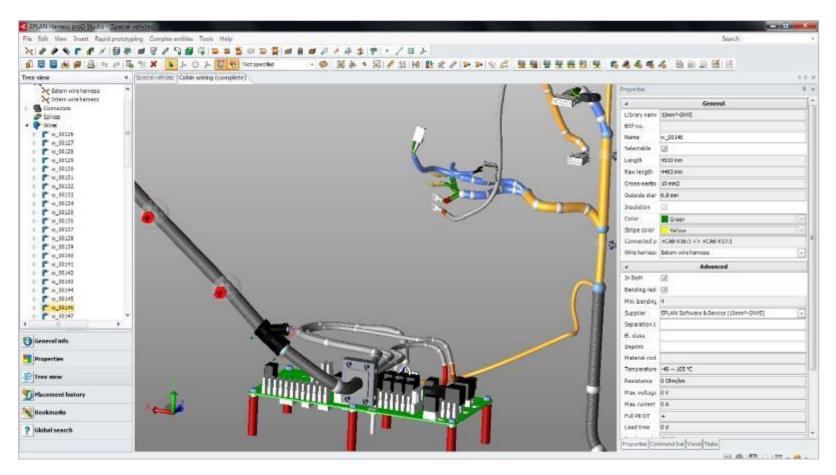


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STEPS DURING ELECTRICAL ENGINEERING PROCESS

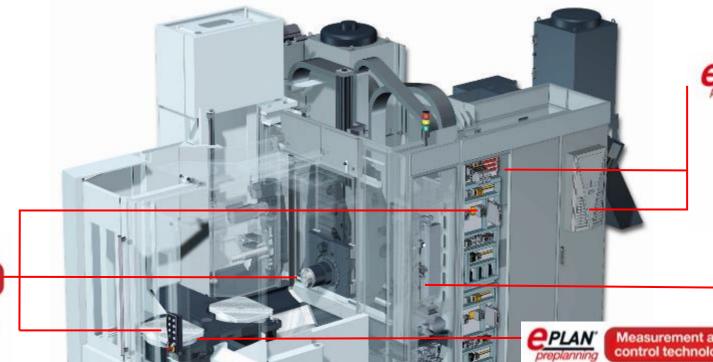






THE REAL WORLD IS DRIVEN BY MORE THAN ONE DISCIPLINE







Control cabinet engineering

- 3D mounting layout
- Control cabinets
- Switchgear
- · Flexible power distributions
- Order information
- · Production drawings
- NC machine control



Electrical engineering

- Power drives
- Electrical control systems
- · Safety engineering
- Machine monitoring
- Machine wiring
- PLC (digital/analogue)



control technology

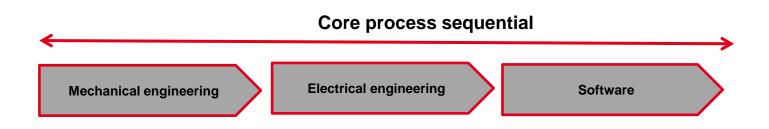
- Basic Engineering
- · Measurement systems and sensors for monitoring process parameters



- Pneumatics
- Hydraulics
- Cooling (workpiece/system)
- Lubrication

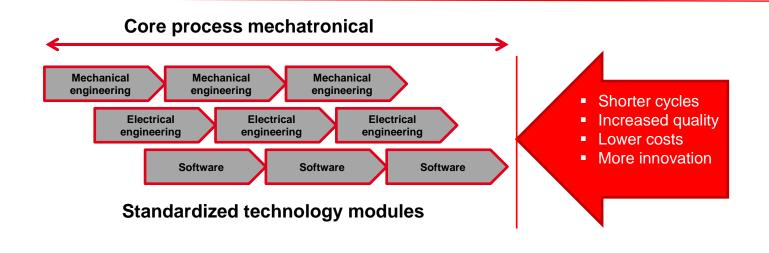
WHAT IS THE DRIVING FORCE FOR MECHATRONICS?





Traditional process:

- Sequential
- Separate
- Low re-use
- Low coordination

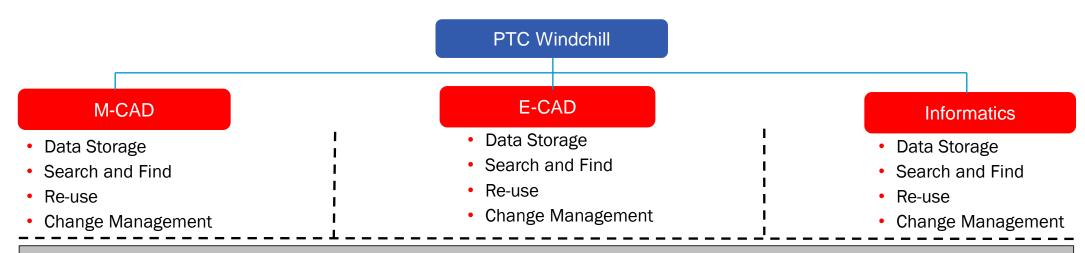


Future process:

- Parallel
- Modularization
- Focus on re-use
- Coordinated

COMMON DATA MANAGEMENT FOR ALL DISCIPLINES





Process:

- Management of digital product structure in the life-cycle
- Single source of truth
- Workflow-Management for release and change management
- Requirement management for the entire product

Summary:

Processes are mainly implemented for the mechanical design, <u>not for electrical design and informatics</u>, <u>yet</u>. Complete product representation is not implemented, yet.

ELECTRICAL ENGINEERING - THE PROCESS

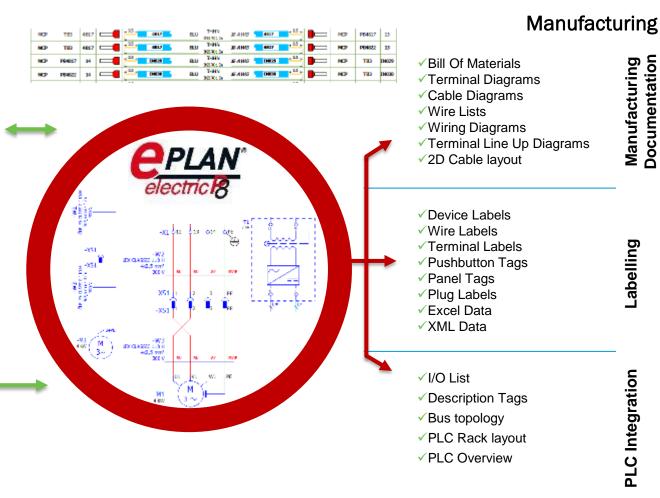


Engineering









Manufacturing Integration

RIT.SV 9340.510	1
9340510	
RIT.SV 9342.870	1
9342870	
RIT.8806500	1
8806500	

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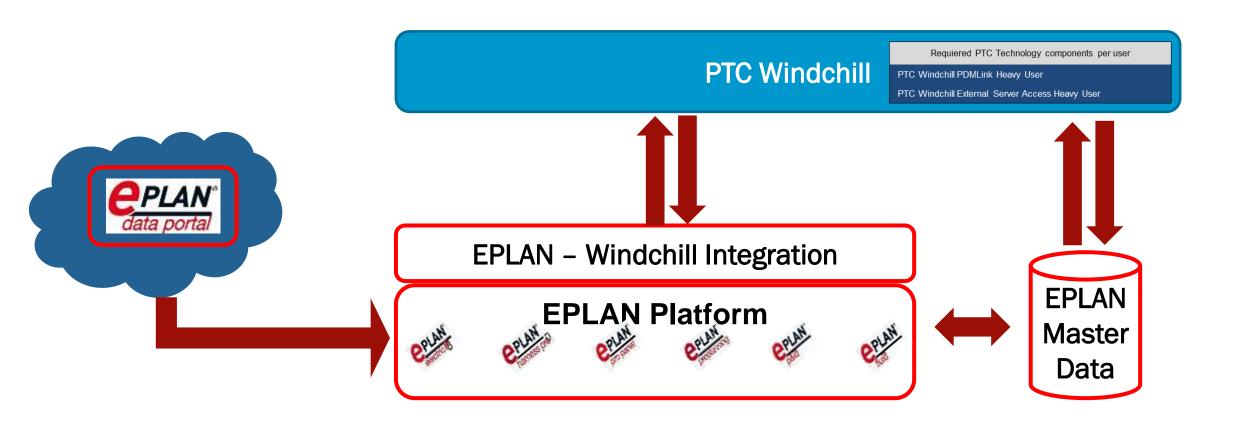
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ĸ.		SPARE	MCP PE05302	13	Input	INV11
3	MONIBS INDIZ	SIWIL	MCP PLOSSOS	14	Input	IN012



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EPLAN WINDCHILL INTEGRATION - ARCHITECTURE



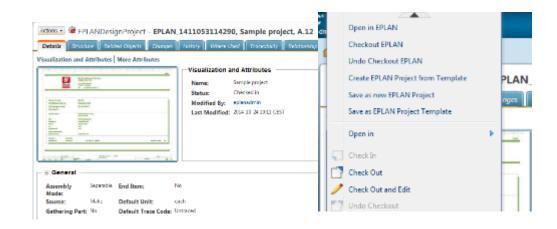


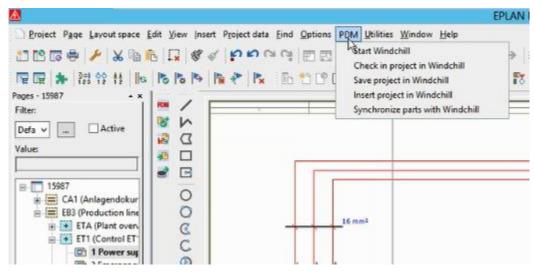
DESIGN DATA MANAGEMENT



Main functionality

- Open, Save & revise of EPLAN Designs
- New EPLAN project from template
- Save & revise (create & update) BOM
- Map Windchill attributes to EPLAN Design
- Save & revise (create & update) resulting documents



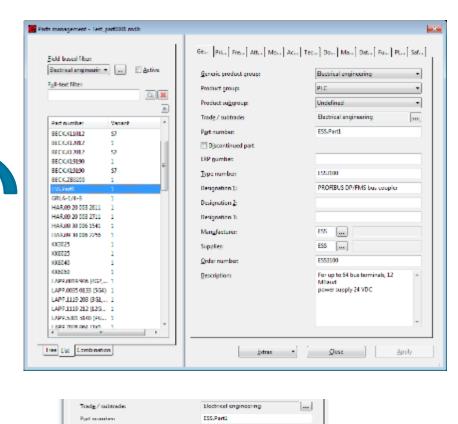


SYNCHRONIZATION OF CATALOGUE PARTS



- Synchronization of catalogue parts bi-directional
- Create new catalogue parts on demand or scheduled
- Create new EPLAN catalogue parts from Windchill based on release processes
- Map Windchill attributes, status and classification information to EPLAN and vice versa





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APPROACH OF IMPLEMENTATION – EPLAN WINDCHILL INTEGRATION



Kickoff Workshop Specification & Configuration

Adjustment

Installation

Analysis of Requirements and Workflows Creation of documentation

If Necessary: Implementation of individual pre and post processes Delivery

KICK-OFF WORKSHOP



Participants:

- Customer: PLM Admin, M-CAD user if necessary, E-CAD user,
- EPLAN integration consultant
- Consultant of customer's Windchill implementation partner

Preferred method of workshop:

- Checklist with predefined topics:
 - IT landscape definition
 - Parts management
 - Bill of Materials
 - Document Management
 - Migration of legacy data and processes



IT LANDSCAPE AND GENERAL SETUP



Prerequisites for a successful integration project

- Standardized product installation
- Common understanding about requirements and goals between participants
- Common understanding, wording and meaning between the different departments of the customer!

IT Landscape

- Definition of involved systems, versions, and amount of data
- Setup of a version matrix of all systems in scope

Additional requirements

- Unattended jobs for processing documents
- Further linked systems which may affect the authoring tool integration (e.g. linkage to ERP or manufacturing systems)



PARTS MANAGEMENT



Content:

- Quantity structure of parts and new created parts per month
- Definition of various processes
- Article creation, Release, Change Management, Substituted parts ...
- Data responsibility
- Parts classification
 - EPLAN classification vs. standards (e-class or similar)
 - Classification of electrical, mechanical and electricmechanic parts
- Data mapping
 - Multiple languages
 - Datatypes, restrictions and external data



BILL OF MATERIALS



Content

- Utilization of BOM in electrical engineering
 - Use of BOM in product development vs customer order process
 - Doubling of actuators and sensors in discipline specific BOMs
 - Structuring of BOM in electrical engineering for overview, purchasing processes, lived practice
- Occurrences and BOM-line attributes
- Check-routines, mapping, re-use
- Mapping
- Partial release of BOM structures
- Re-use

L	e	V	e	l	1

Level 2

Level 3

Part/Product 1	Qty	Pointer to level
A	1	A
В	2	В
C	1	

	Part/A	Qty	Pointer to
	В	1	В
	D	2	
_			_

		_
Part/B	Qty	Pointer to
Е	3	
F	1	

DOCUMENT MANAGEMENT



Content:

- Quantity of documents and document types used in integration
- projects
 - Create new
 - Create based on template
 - Save as
 - Release
 - Change management
- Additional documents and reports

Migration of legacy data

Store as flat documents vs. mass import as EPLAN items









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