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Experiences with dictionary usage

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Energy Oil & Gas and Industrial Applications

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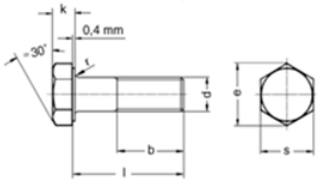
Material Classification - Status Quo 2007

- Each site has its own material classification (or none at all)
- Multiple and different classification of materials
- Valuation is available in local language
- No general rules for classification of material exist
- International standards are NOT used

Master Data Topics – Numbering



Example : *Hex Head Bolt*

Location	Number	Description
Duisburg	72715498	Sechskantschraube M 24 x220
Finspong	T1621-741	Sexkantsskruv
Lincoln	SP007933	HEX HEAD BOLT
Görlitz	5-2100-3620-09	6-KT-Schraube
Hengelo	04W10A470GAA	Hex hd bolt M 24 x 220

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Problems

- No unique data structures in IT-systems of PGI sites
- Inconsistent and bad Master Data quality
- Language management

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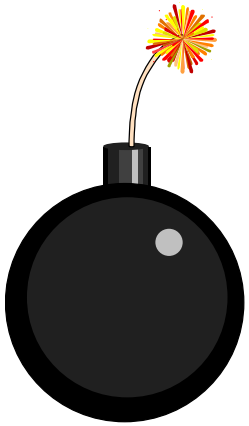
Consequences

- Higher costs through redundant work in product development
- Higher costs in procurement and spare part supply
- Maintenance of manufacturing plants



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Problems … - an example

- During acceptance test of compressor a valve fails (valve control defective)
- Problem:
  - ⇨ Spare part not available at plant
  - ⇨ Delivery time from supplier is 30 days
- Consequences:
  - ⇨ Compressor acceptance test delayed
  - ⇨ Delivery to customer delayed
- Business Impact:
  - ⇨ Penalty payments
  - ⇨ Late receipt of payment

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Solution

- From system view to Corporate view
  - ⇨ Until now focus was one system
  - ⇨ New approach – focus on supporting all systems along the supply chain
- Benefit
  - ⇨ Reuse of data
  - ⇨ Increase in data quality
  - ⇨ Reduction in redundant data maintenance

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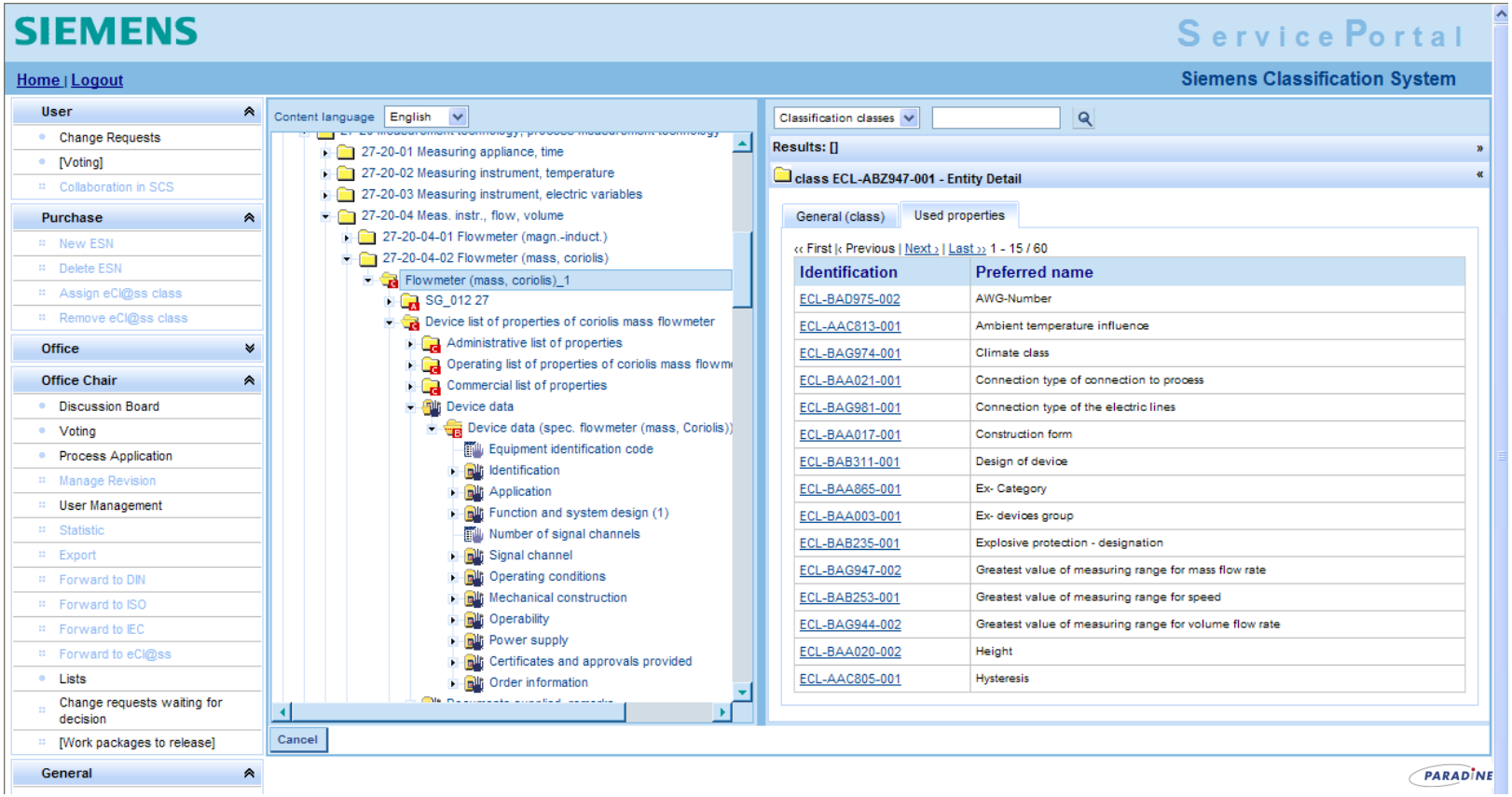
SCS-Siemens Classification System



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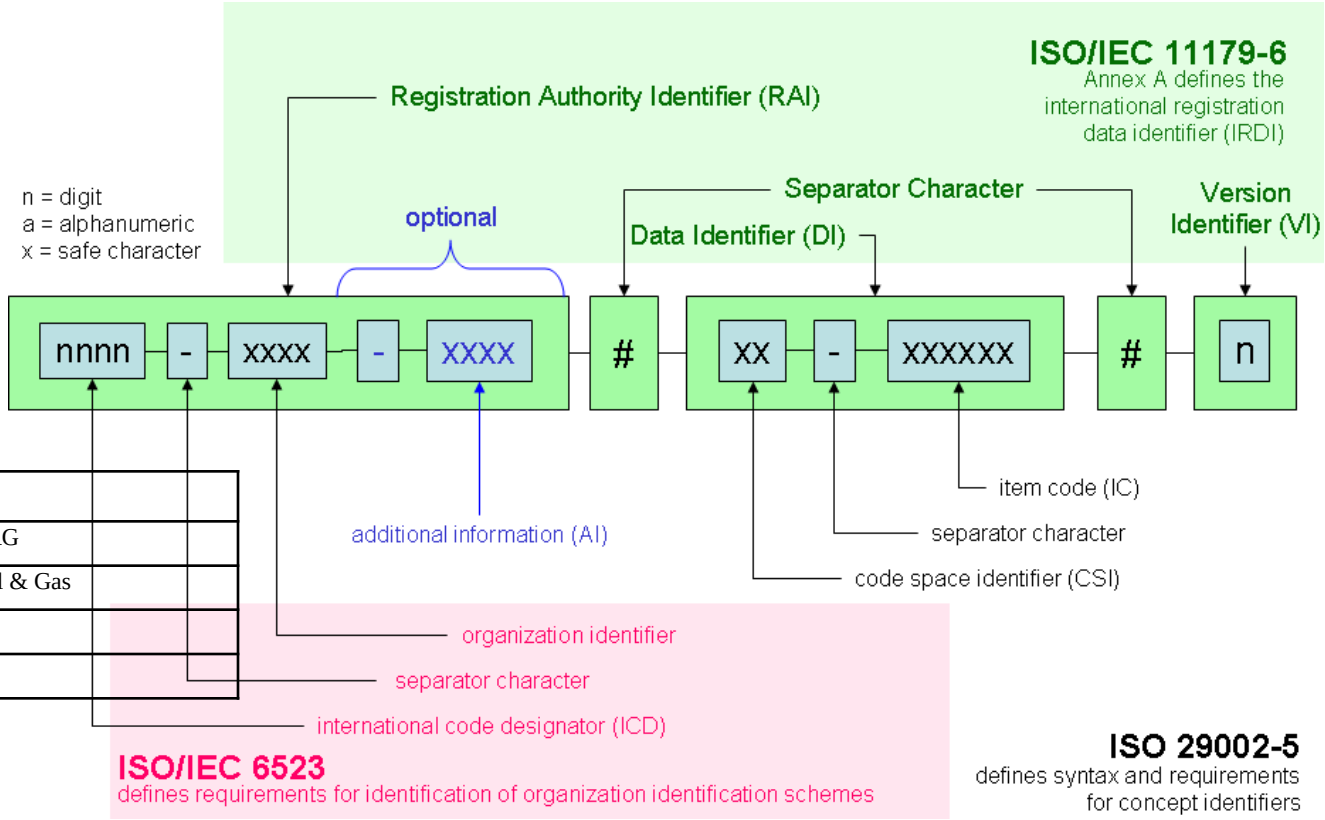
Use of ISO 29002-5 identification schema



Org ID	Firma
0000	Siemens AG
0001	Energy Oil & Gas
0002	A&D
0003	BSH

SCS name space for public and private classification elements (attributes; Classes; properties, values, key words, synonyms)

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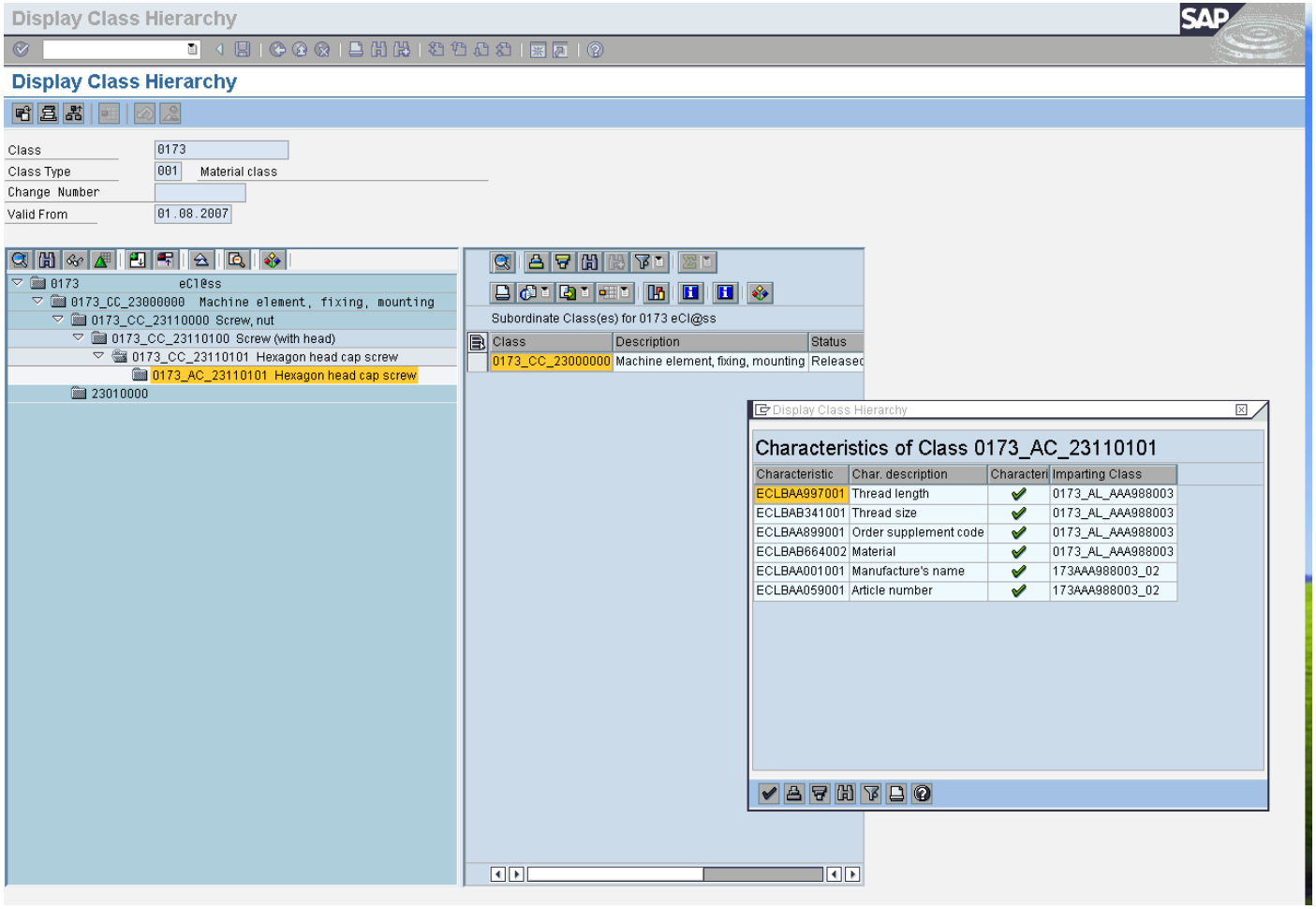
Implementation to Application Systems



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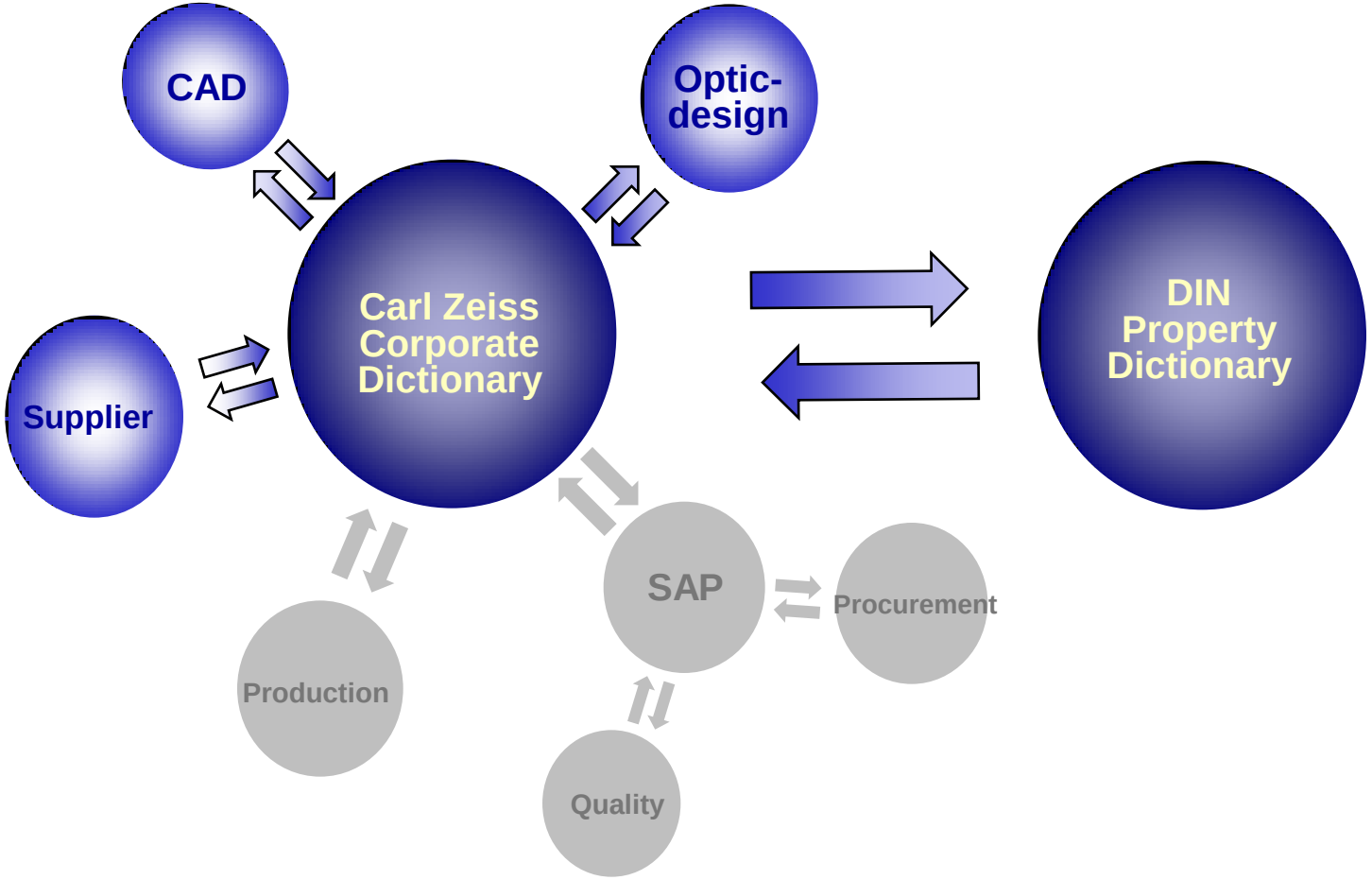
Example: Implementation at Carl Zeiss

ZEISS

Zeiss-Dictionary-Concept



Source: Carl Zeiss

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ISO-DIN-Zeiss Dictionary

Source: Carl Zeiss

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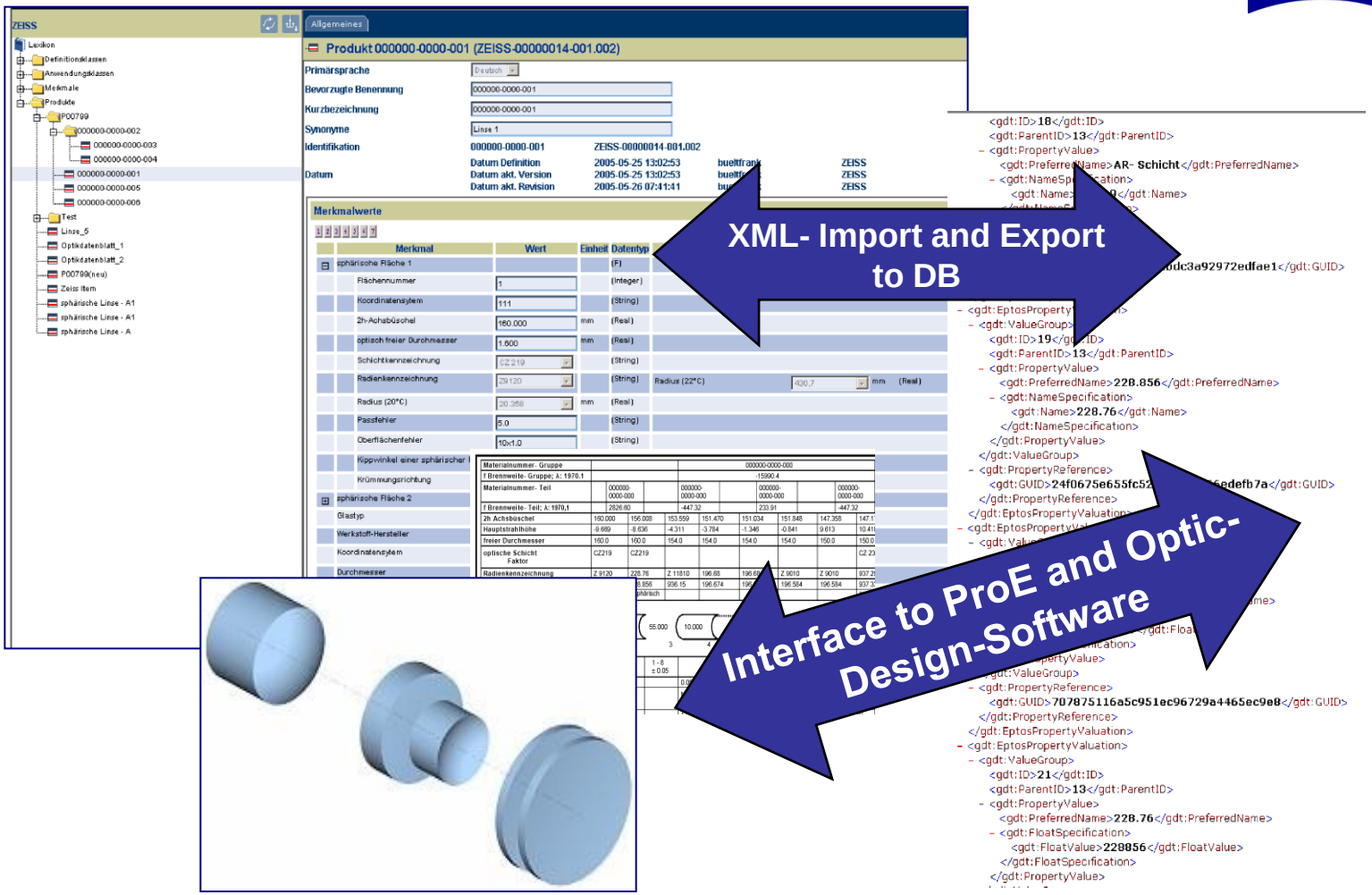
Data-Transfer from Optic-Design to CAD



Source: Carl Zeiss

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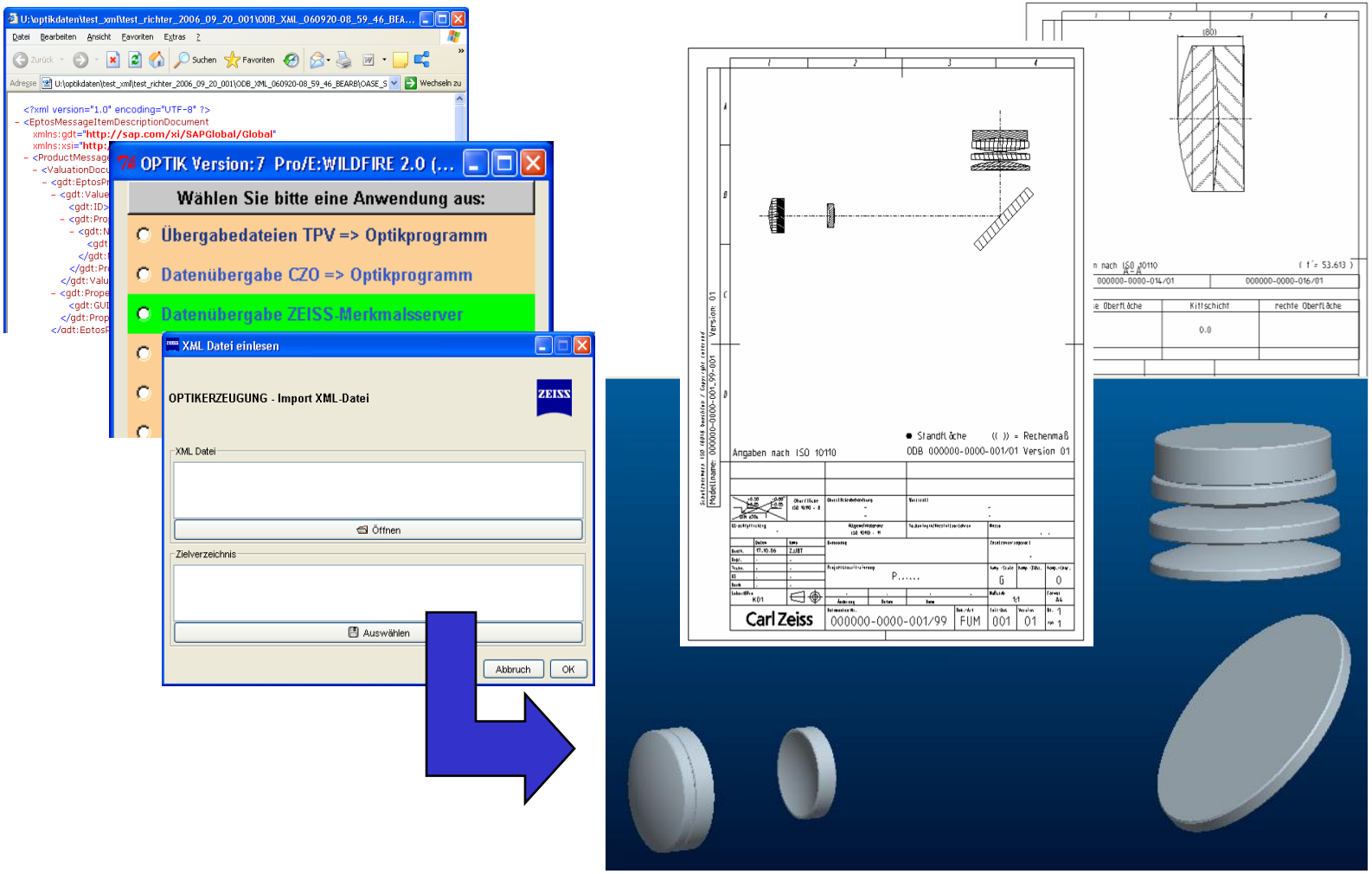
Data about Optical-System transferred in XML-format to Pro-E



Source: Carl Zeiss

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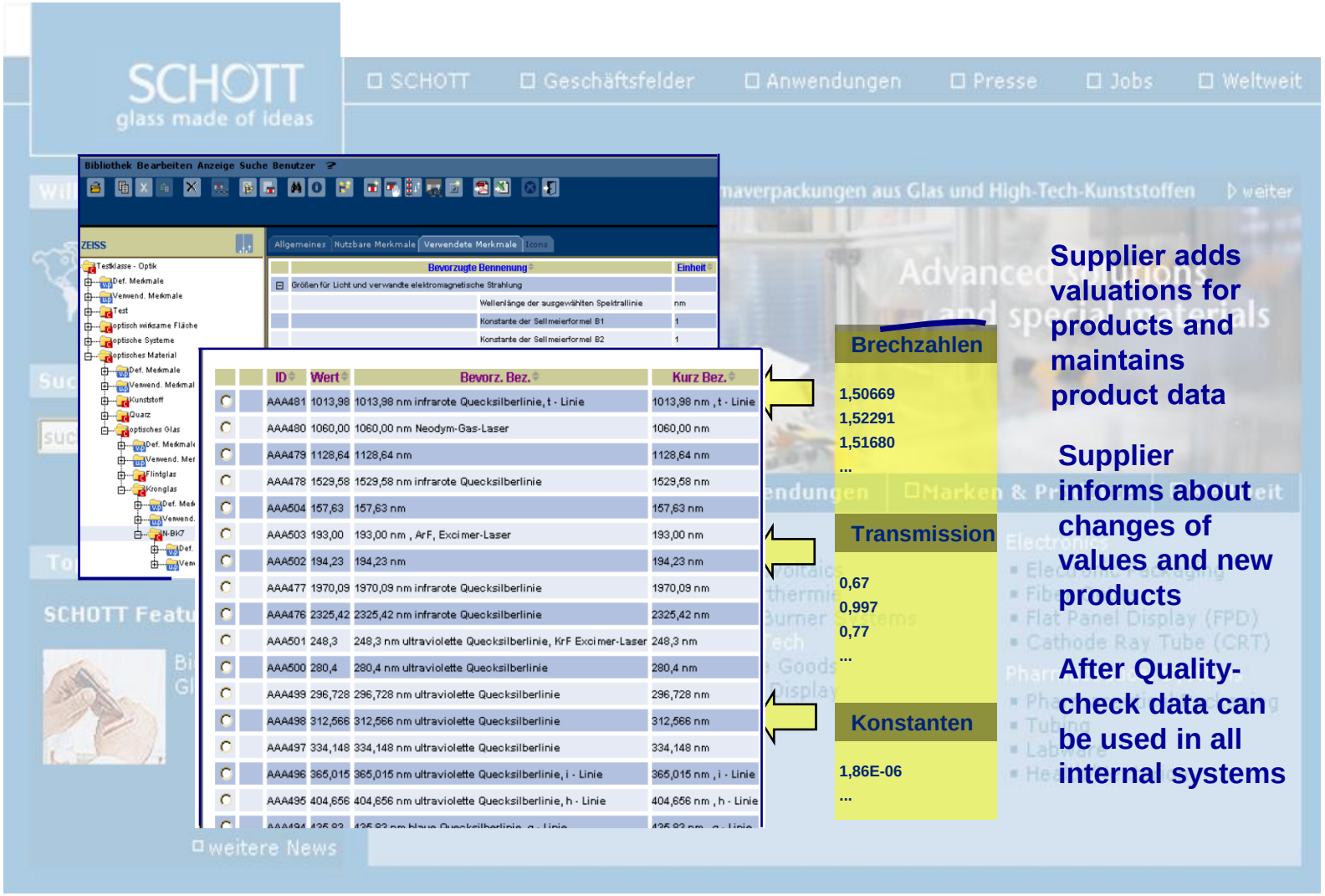
Interface to supplier



Supplier adds valuations for products and maintains product data

Supplier informs about changes of values and new products

After Quality-check data can be used in all internal systems

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Benefits

- Unique Data-Format for external and internal Data-Elements (Classes, Properties, Lists of Values)
- Worldwide unique identification of Data Elements by use of non language dependent Identifier
- Use of the same standardized interfaces for data transfer between internal systems as well as to suppliers and customers

Source: Carl Zeiss

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Experiances from PROLIST

PROLIST International

- PROLIST is an international association defining and maintaining properties and lists of properties for process control/automation devices and systems
- PROLIST Dictionary available at: prolist.paradine.at
  - ⇨ PROLIST-User and Password necessary
  - ⇨ Access through Standard Internet-Browser
- Online Database for development, maintenance and publication of NE 100 Lists of Properties (LoP)
  - ⇨ Compatible to ISO 13584-42 / IEC 61360-2

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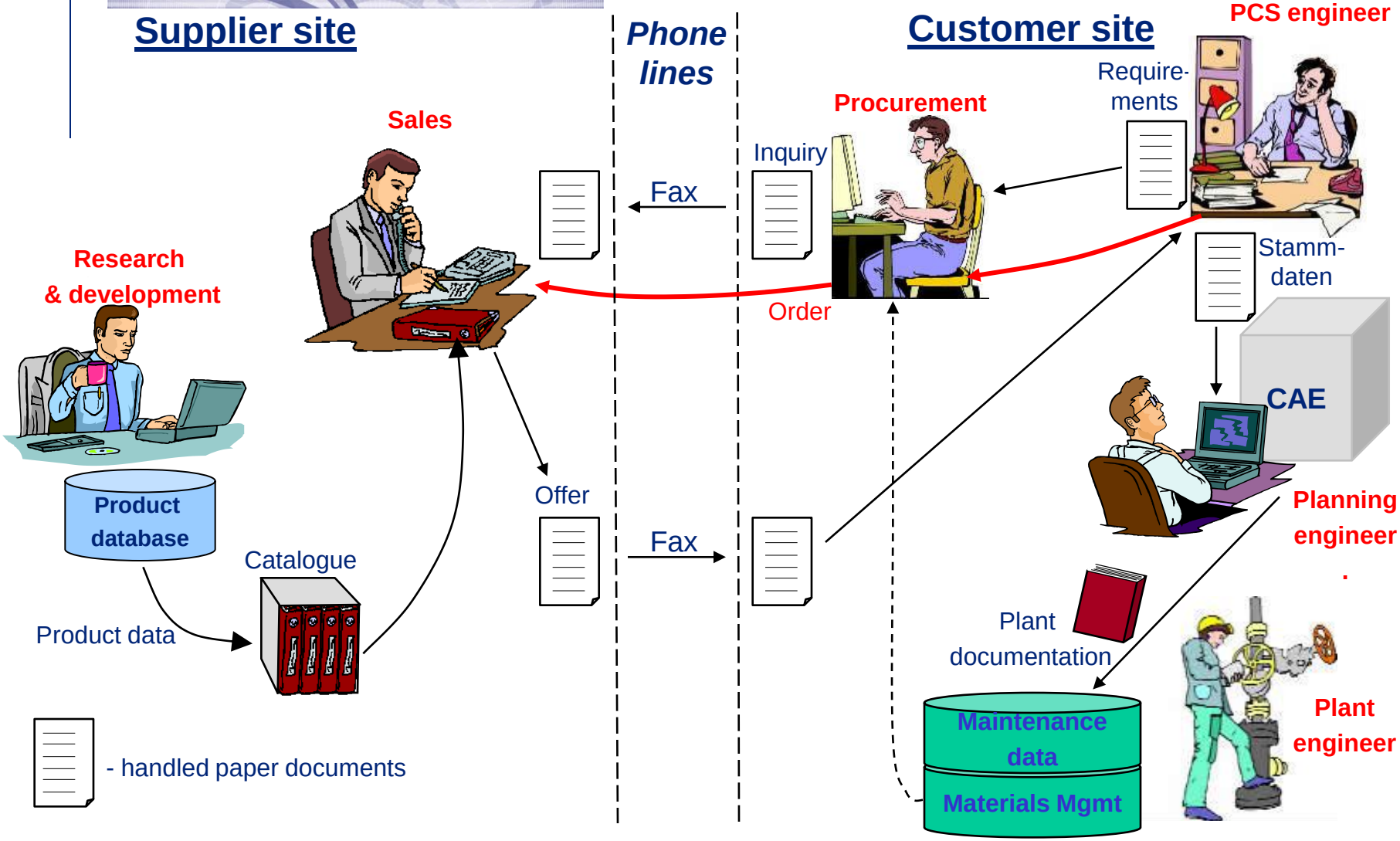
Engineering workflow yesterday and today



Source: PROLIST

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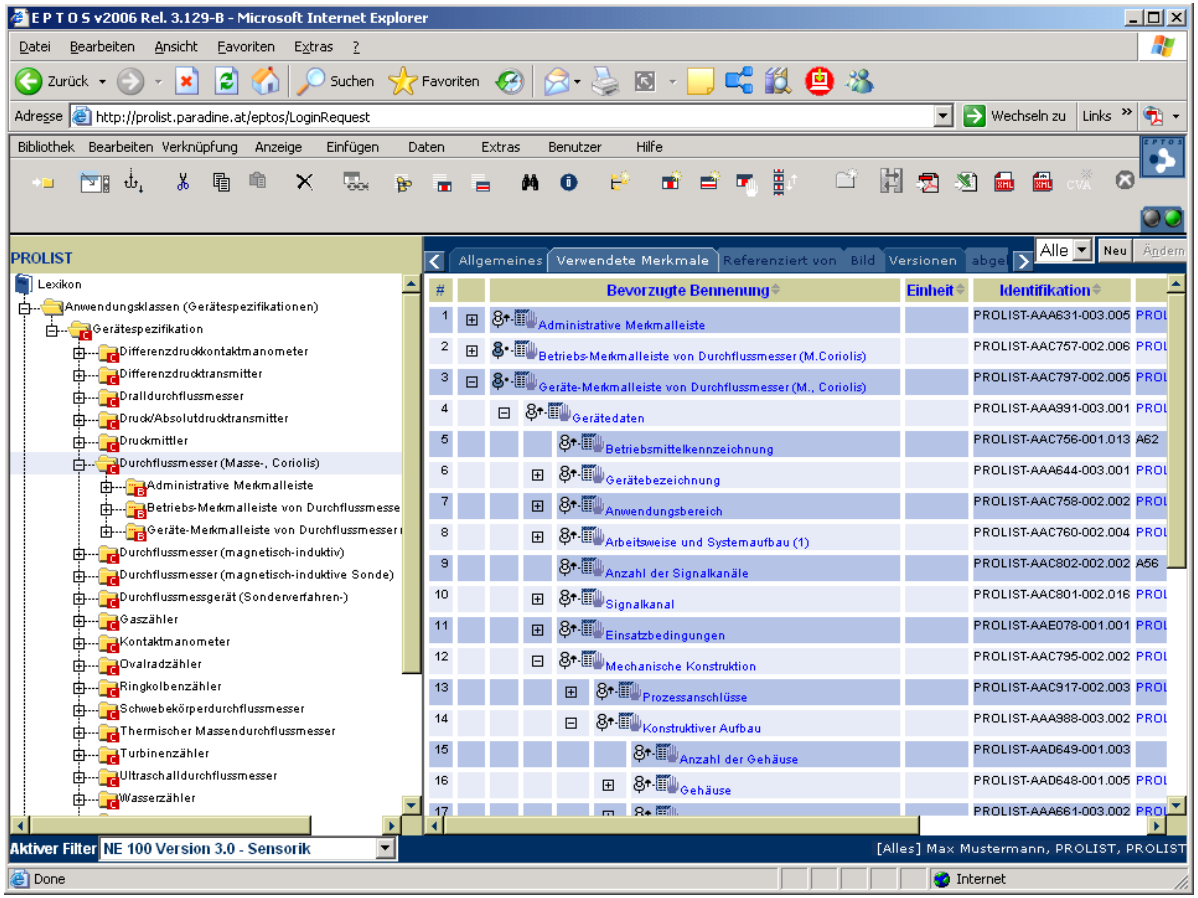
PROLIST - Server



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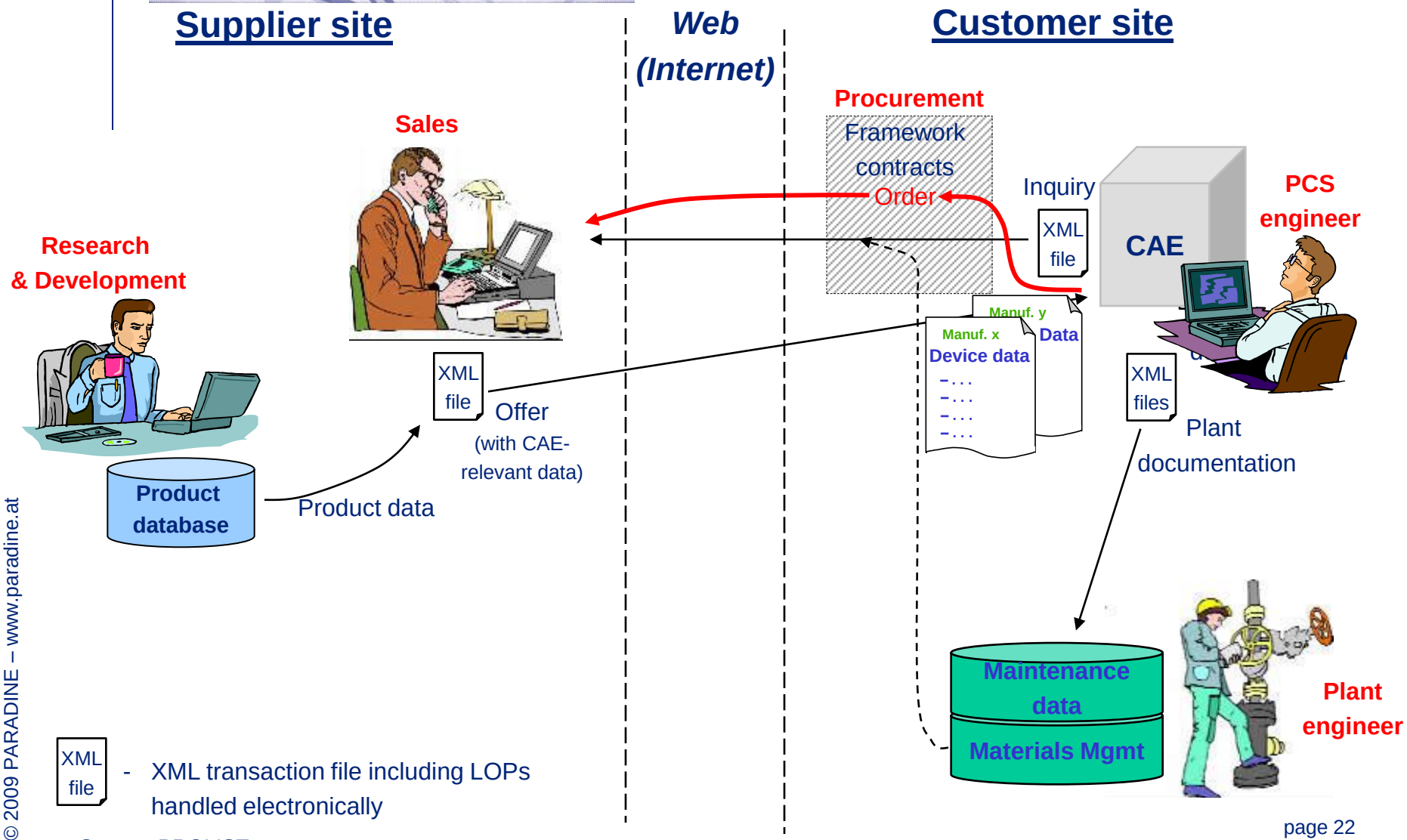
Engineering workflow of PROLIST



Source: PROLIST

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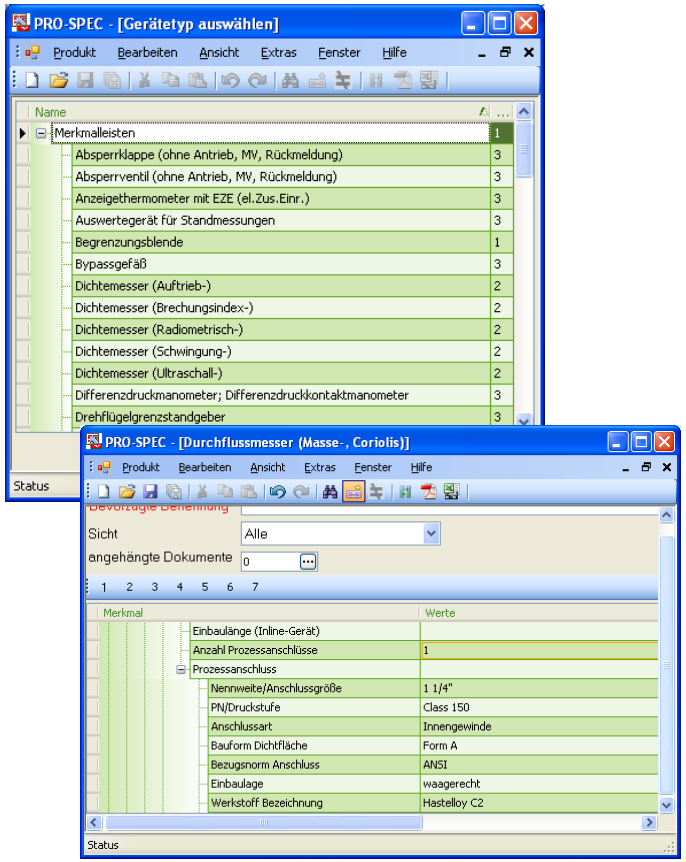
PRO-SPEC (PC Application)

- PC Tool to support usage of PROLIST-workflows to optimize business processes
- Easy installation (XP/Vista)
- Test-license free of charge
- Implemented within SMEs and for pilot installations within large organizations



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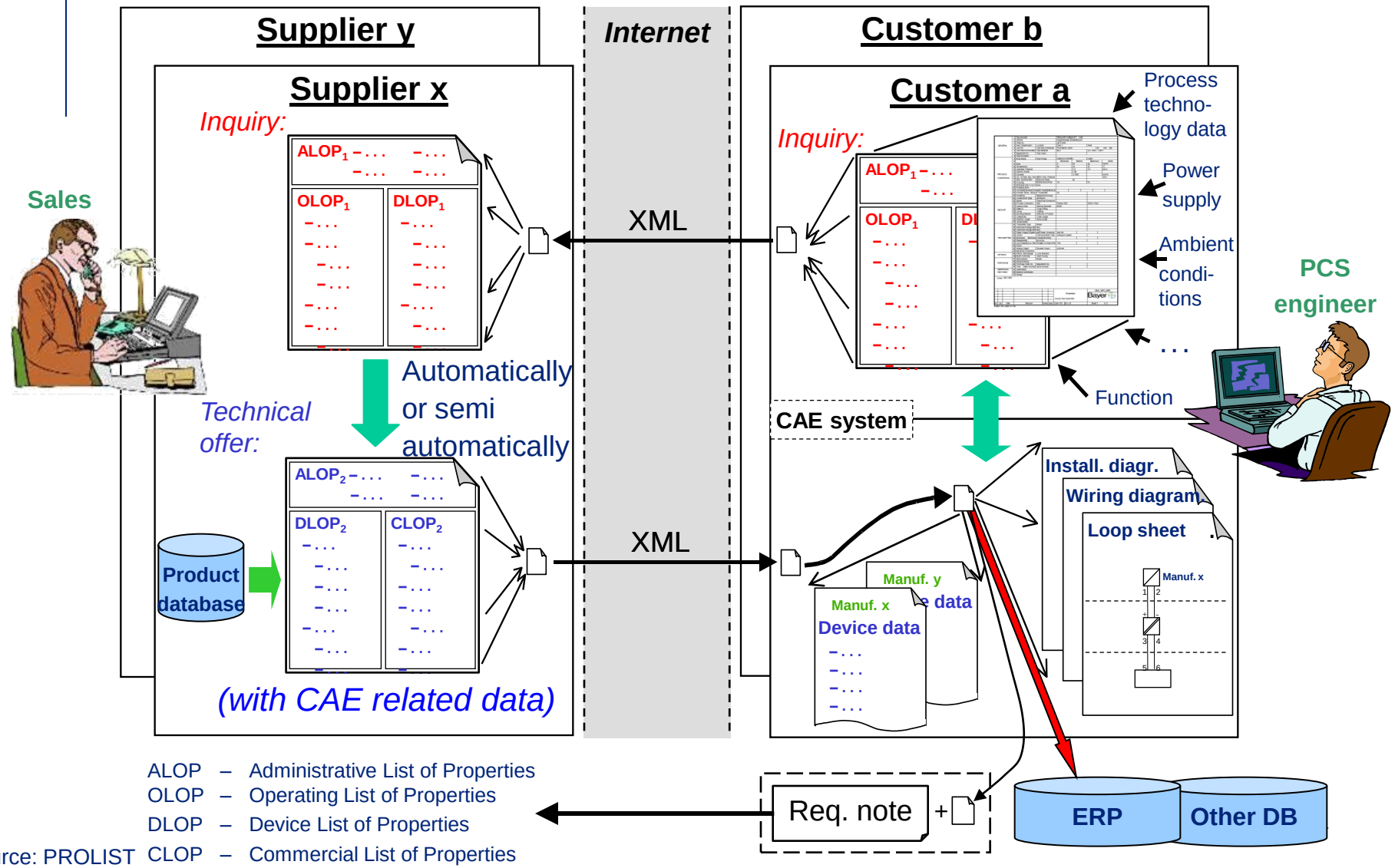
Core engineering workflow of PROLIST



ALOP – Administrative List of Properties
OLOP – Operating List of Properties
DLOP – Device List of Properties
CLOP – Commercial List of Properties

Source: PROLIST

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Operative implementation of the NE 100 contents (1)

- **BASF**
  - ⇨ Uses CAE system PRODOK of Rösberg
  - ⇨ Roll out of the NE 100 interface for every process control employee since June 1, 2008
- **EVONIK Degussa**
  - ⇨ Uses CAE system PRODOK of Rösberg
  - ⇨ Implements NE 100 (PROLIST) workflow in first large project with 1000 loops
- **Bayer Technology Services (BTS)**
  - ⇨ Uses CAE system SmartPlant Instrumentation (SPI) of Intergraph
  - ⇨ Bayer PCT community decided to support the NE 100 implementation on base of an economic research made in 2007
  - ⇨ BTS started in 2008 a project for preparations for the use of the NE 100 in investment projects
- **Wacker-Chemie**
  - ⇨ Uses CAE system Comos PT of Innotec
  - ⇨ Has been using NE 100 V.1.0 in Comos PT since several years. Intends to adapt the current NE 100 version

Source: PROLIST

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Operative implementation of the NE 100 contents (2)

- **DSM**
  - ⇨ Uses CAE system SmartPlant Instrumentation of Intergraph
  - ⇨ Has been waiting for results of the project at BTS with Intergraph
- **Kronos**
  - ⇨ Uses CAE system Comos PT of Innotec
  - ⇨ Intends to use the NE 100 (PROLIST) workflow for completing the PCT documentation
- **Further user (customer)**
  - ⇨ More and more engineering and contractor companies start showing interest in NE 100 in order to start implementing it in diverse tools

- The manufacturers of process control equipment take now part on the automated data exchange.
  With this, it is now possible to import automatically (without repeated manual data entering) device data, coming from different sources, into systems of a plant owner or contractor.

Source: PROLIST

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Conclusion

- Implementations ARE available
- Customers save money in deploying the solutions
- Standardization in Product Classification and Product Description reduces the complexity of business processes

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