PD ENGINE

comprehensive solution for development processes

exentra

from knowledge to intelligence

exentra
from knowledge to intelligence

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.

exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

PD ENGINE
The comprehensive solution for your development processes

PD-Engine is the comprehensive solution for businesses involving complex development processes with distributed development teams operating worldwide. Companies operating within the automotive and aerospatial industries or industrial machinery and plant engineering.
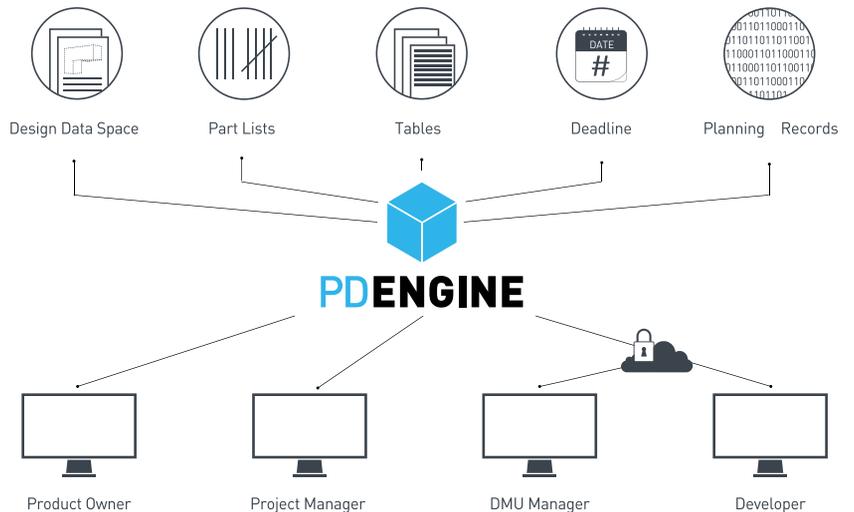
With PD-Engine design engineers can concentrate on their development tasks without being distracted by tasks like data acquisition and maintenance. That's because PD Engine automates those tasks and allows them to carry out complex development projects efficiently.

PD-Engine manages and improves data quality over the entire product lifecycle within one solution, and therefore reduces the amount of software that needs to be installed and maintained

In short:
PD Engine is a uniquely useful tool for your company, which quickly becomes indispensable to everyone involved in your product development projects.

❶ FUNCTIONAL OVERVIEW

| Design Data Space | Part Lists | Tables | Deadline | Planning | Records |

PD ENGINE

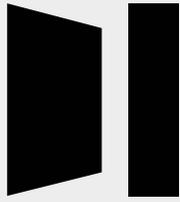| Product Owner | Project Manager | DMU Manager | Developer |

❷ APPLICATION MODULES

You can substantially improve your engineering supply chain with the software tools provided by PD-Engine for cross-company product development and efficiently manage all of your product development processes.

| PACKAGE | WEIGHT | CHECK | PROJECT | MONITOR | CUSTOM |
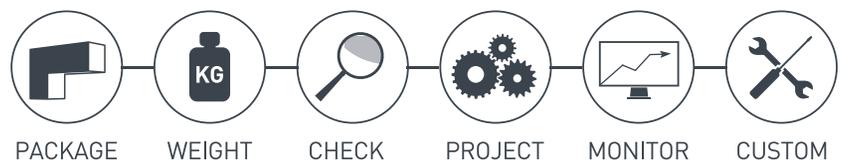
Based on the extremely fast and well-structured PD-Engine Database System, the system modules can be combined with complete freedom.

exentra

from knowledge to intelligence

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.

exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

CORE FUNCTIONS

exentra PD Engine provides a comprehensive solution for development processes. It allows you to carry out complex development projects efficiently, especially where you need to collaborate across business and system boundaries.

HISTORY
A quick trip back in time

GEOSEARCH
Search using geometrical criteria such as box or neighbourhood searches

WORKFLOW
Can be used to automate almost any workflow

WORKBENCH
All core functions are controlled using a central workbench

ACQUIRE
Definition of data sources for automatic import

SECURITY
Authentication and authorisation, together with enhanced protection against unauthorised access

DELTA
Comparison of states at two different points in time or in two different configurations

CONVERT
Auto-conversion of a variety of CAD documents

3D VIEW
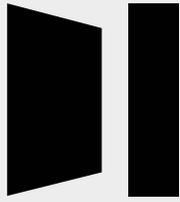Format-independent WebGL visualisation for all commonly used CAD formats

BENEFITS

- Fast real-time access to product information

- More effective, time-saving workflows for developers and designers

- Eliminates sources of error and improves data quality

- Minimises such activities as data searching and maintenance

- Modern, user-friendly UI (User Interface)

- Future proofed by enforcing web standards for all end user devices (PCs, Smartphones, iPads, etc.)

- Easy integration into existing infrastructure and simple connection to upstream systems

SERVICES

PD-Engine's application modules can be operated by exentra as a comprehensive outsourced system in a dedicated secure customer environment.

- Direct access to application modules

- Location-independent usability using secure private cloud

- Dynamic adjustment of capacities

- Skilled advice and support direct from exentra as service provider

- No subsequent costs for system maintenance

exentra
from knowledge to intelligence

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.
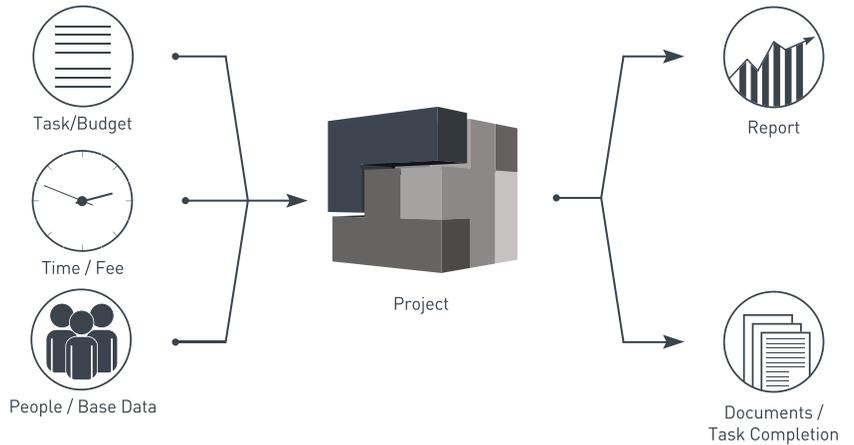
exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

PD**ENGINE**|PROJECT

Task/Budget

Time / Fee

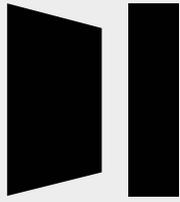People / Base Data

Project

Report

Documents /
Task Completion

FEATURES

This application is an information and management system for recording, maintaining, managing and evaluating the following types of information:

Basic enterprise and employee data as well as project related data

- Skills, hourly rates, recording working time including flexible time, vacation and worktime models
- Project base data, project booking, and project schedules
- Tenders and Orders
- Outgoing/customer invoices and cost centres
- Customer revenues, unproductive project and overhead hours
- Inventories and receipts for project-related creditors
- and more...

![exentra logo]

exentra
from knowledge to intelligence

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.
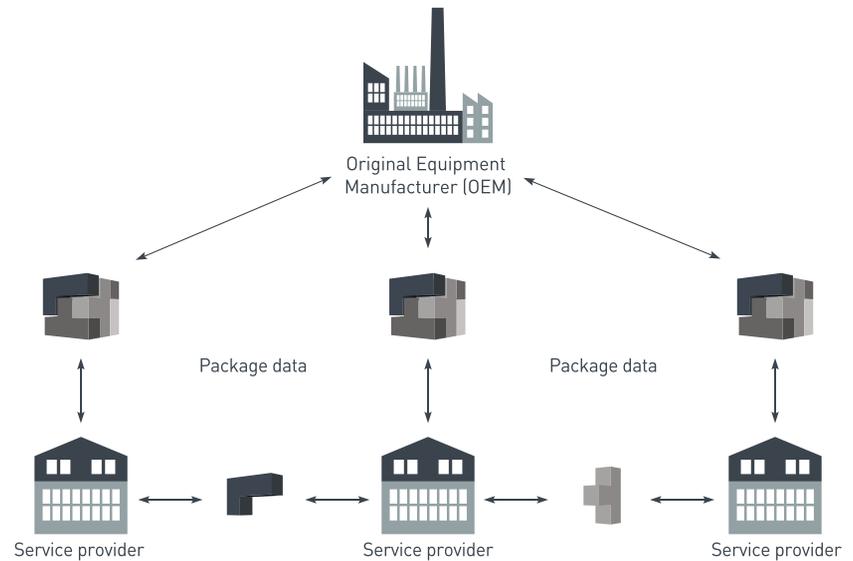
exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

PD**ENGINE**|PACKAGE

Original Equipment Manufacturer (OEM)

Package data   Package data

Service provider   Service provider   Service provider

⑤ FEATURES

The Application package provides a secure modern infrastructure for handling and exchanging development data such as CAD models, BOM and product structures. The application allows data from many different projects to be made available. Quickly, easily and securely over a web-based UI for everyone involved in the relevant projects, independently of the CAD or PDM tools used.

AUTOMATED DATA EXCHANGE
Models and structures are always up to date and are always linked to the right project.

DATA PROCESSING
Automatic cleansing, processing and formatting.

ARCHIVING
Data are fully historicised and can be re-accessed very easily at any time

CONVERSION
A wide range of 3D and structural formats – such as cgr, JT, 3DXML, PLMXML, STEP, 3DPDF and others – can be created and made available quickly and efficiently in a variety of ways.

VISUALISATION
All tasks, sub-tasks or differences can be displayed using standard viewers or directly in the browser in the WebGL.
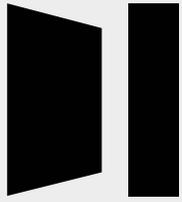
EXPORT TO CAD
Easy export to commonly used CAD systems as CATIA V5 (Pro/E / NX functionality is currently in development).

FILTERING
Filter parts based on a variety of features – including responsibilities, bounding box, neighbourhood, distance to part searches, or by text.

WORK
Add your own work data, archive it and combine it with any other date to establish a comprehensive project context.

PD**ENGINE**|CHECK

No clash!

ⓕ FEATURES

With support of this application module, you can automate DMU* checks and display their results quickly, easily and securely. The module detects and then shows any clashes.

COMBINING STRUCTURES
Combine different design structures and products into a single test environment.

OPTIMISED TESTING
Automat DMU checks whenever changes are made to geometries or the position of a part within the defined design space.

DISTRIBUTED CALCULATION
Each individual clash detection is distributed to a workstation or cluster intelligently.

INHERITANCE AND RECOGNITION
Test results already in the database are re-used, already existing conflict assessments are inherited by problem areas that are as yet unresolved.

DOCUMENTATION
Conflicts can be assessed easily and efficiently using specialised methods. Statuses, images and comments may either be added or edited via the web UI. Additional information can be imported from the relevant CAD system.

ASSESSMENT
You can use design spaces, zones, affected components and much more for setting filters and display overviews of status assessments.

* digital mock-ups

---

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.
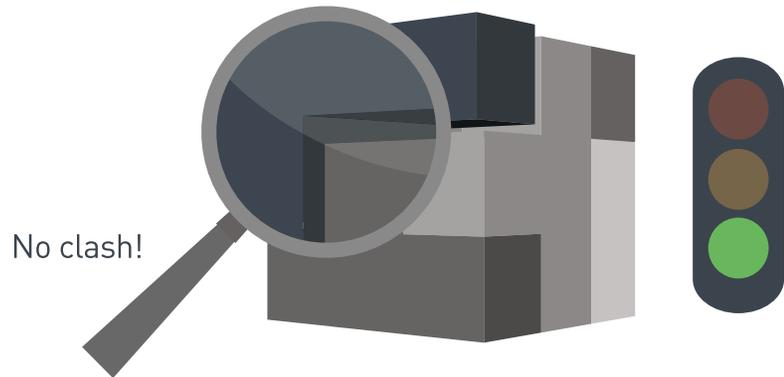
exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

PD**ENGINE**|WEIGHT

Calculated ⟷ Projected ⟷ Weighted

⊕ FEATURES

Exentra's Weight application module is a high-performance tool for managing the weight of your products.

EXTRACTION
Automatic extraction of meta-information from CAD models.

ASSESSMENT
Easy assessment of a variety of weight types

CHANGES IN WEIGHT OVER TIME
Monitor the entire history of parts, without any need to keep multiple local versions of a CAD document

TRACKING
Automate warnings when target or critical values are exceeded based.

PLAUSIBILITY CHECKING
Comparison of a variety of weight data sources (e.g. CAD documents, parts lists, Excel reports, document management/PDM) and weight types (weighed, calculated, projected) for plausibility, with adjustable permitted variances.

---

exentra

from knowledge to intelligence

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.
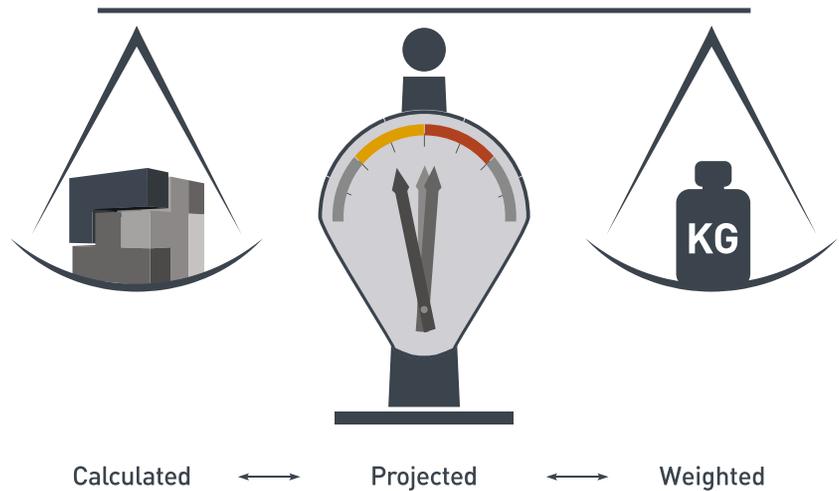
exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.

exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

PD**ENGINE**|MONITOR

⦿ FEATURES

Using the Monitor module you can easily and reproducibly call up information from a variety of different sources and display it clearly on a web User Interface. You can use the module to set where dates, costs, parts numbers and changes are assigned, which will allow you to make comprehensive searches and assessments of all key information using a single web UI.

DATA CAPTURE
Definition of a data source such as a parts list, project schedule or change requests for regular import

ASSESSMENT/CHARTING
Interactive assessment of defined information such as weight, deadlines and costs.

DELTA MODE
Interactive comparison of two points in time or of two projects or configurations to identify differences, such as eliminations, new parts, changes in position, and increases or decreases in weight

FILTERING
Comprehensive filtering options also using geometrical neighbourhood searching, mounting position, code/configuration and person responsible

TRIGGERS/EVENTS
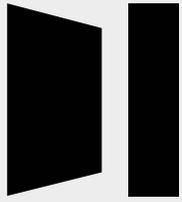Carrying out tasks triggered by changes such as conversions, warning messages or calculations

3D VISUALISATION
Optional 3D viewer integration direct in web browser without any need for a plug-in (WebGL-enabled browser required)

INCLUSION OF CAD PMI+ AND META-INFORMATION
Analysis of content of CAD documents such as materials, volumes, weights, connection methods or reference points.

* PMI stands for Product Manufacturing Information. It concentrates on providing supplementary information relevant to production not provided by CAD geometries.

exentra

from knowledge to intelligence

exentra GmbH is an innovative software company for the next generation of business intelligence solutions. At a time of ever-increasing amount of information, exentra tools allow for systematically obtaining, processing and evaluating this information. Using the exentra tools will give you a decisive competitive advantage.

Experience
exentra has accumulated, over the last decade, enormous competence in the technologies and processes used in the automotive and aeronautical/space industries. exentra solutions are used by such renowned companies as Porsche, Daimler, Audi, Behr/Mahle, csi Entwicklungstechnik, ASAP engineering, amongst many others.

Made in Germany
As a certified German software producer, exentra is keen to invest in its German base, taking advantage of the country's world-leading resources and virtues of quality.

Portfolio
The exentra portfolio includes the development of comprehensive solutions, one-off software projects and specialised product-development consulting services. Our range of activities is rounded off by our ability to provide secure IT services.

PD-Engine
exentra is also the vendor of PD-Engine, the first comprehensive solution able to combine the development processes within the automotive industry, aerospace sectors, and industrial machinery and plant engineering industries.

The company is based in Pfaffenhofen a.d.Ilm in Bavaria, between Ingolstadt and Munich. We also operate out of an office in Neckarsulm in Baden-Württemberg.

exentra GmbH
Hauptplatz 18
85276 Pfaffenhofen a.d. Ilm, Germany
Tel +49 (0)8441 47247-0
Fax +49 (0)8441 47247-99

Branch office:
exentra GmbH
Robert-Mayer-Str. 10 74172 Neckarsulm, Germany
Tel. +49 (0)7132 1 596-0

www.exentra.de

PD**ENGINE**|CUSTOM

All existing PD-Engine application modules can be extended and customised for particular specialised uses and products.

You are, as the customer, always at the center of any customized development process. Your specific processes and needs constitute the most important pillar in our software development approach. We provide intensive consulting services and support for our agile development process. All the way from the initial idea to the finished software application.

This includes analysing requirements jointly with our customers, drawing up user stories to describe problems and abstracting the solution, as well as completing final implementation of your cutting-edge application. We develop our software by using object-oriented methodology,by following clean coding standards and by using a test-driven development method.

Throughout the entire project, we remain in close contact with our customers.