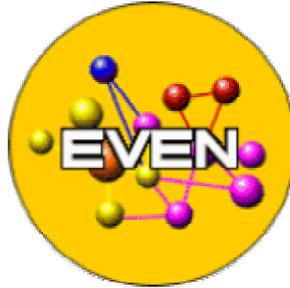


EUROPEAN VIRTUAL ENGINEERING NETWORK



# EUROPEAN VIRTUAL ENGINEERING NETWORK

# EVEN

## QUESTIONNAIRE FOR EUROPEAN COMPANIES

### IDENTIFICATION OF DEMAND FOR ENGINEERING TECHNOLOGIES AND TOOLS SUPPORTING THE PRODUCT DEVELOPMENT PROCESS (PDP)

This questionnaire is part of **EVEN project** (European Virtual Engineering Network), funded by the European Commission. The aim of this project is to create a Virtual Institute at first between 13 partners from 11 European countries, that will help European companies, mainly SMEs, to improve and develop their product development processes offering services related to the use of engineering technologies and tools.

We are sure that the services of the EVEN Institute will help you **to improve your Product Development Process**. For this purpose, we would like to know your opinion and identify your needs related to the product development process of your company.

We would greatly appreciate you taking the time to complete and return this questionnaire by e-mail or fax, before June 14<sup>th</sup> to the following address:

ORGANISATION:

PERSON:

TELEPHONE:

FAX:

All the information included in this questionnaire will be treated **confidentially**, and it will only be used to carry out an added analysis of the whole group of answers.



## EUROPEAN VIRTUAL ENGINEERING NETWORK

### 1. CONTACT DATA

NAME:	.....
POSITION:	.....
COMPANY:	.....
POSTAL ADDRESS:	.....
TEL:	.....
FAX:	.....
E-MAIL:	.....
WEB SITE:	.....

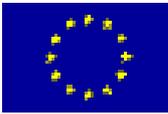
### 2. COMPANY GENERAL DATA

TURNOVER (M€)		EMPLOYEES	
<input type="checkbox"/> < 7	<input type="checkbox"/> 41 – 60	<input type="checkbox"/> 0-49	<input type="checkbox"/> 500-1000
<input type="checkbox"/> 7 – 20	<input type="checkbox"/> MÁS DE 60	<input type="checkbox"/> 50-249	<input type="checkbox"/> MÁS DE 1000
<input type="checkbox"/> 2140		<input type="checkbox"/> 250-499	

### 3. TYPE OF ACTIVITY

Please indicate the most relevant sectors (no more than three) where your main activities are focused on, identifying the role of your company into the value chain of the sectors selected.

SECTOR	FINAL MANUFACTURER	SUPPLIER
AGRIFOOD	<input type="checkbox"/>	<input type="checkbox"/>
WATER AND ENERGY	<input type="checkbox"/>	<input type="checkbox"/>
PHARMACY AND CHEMICAL	<input type="checkbox"/>	<input type="checkbox"/>
PAPER, CARDBOARD AND GRAPHIC ARTS	<input type="checkbox"/>	<input type="checkbox"/>
RUBBER AND PLASTIC PRODUCTS	<input type="checkbox"/>	<input type="checkbox"/>
TEXTILE, FOOTWEAR AND LEATHER PRODUCTS	<input type="checkbox"/>	<input type="checkbox"/>
FURNITURE AND WOOD PRODUCTS	<input type="checkbox"/>	<input type="checkbox"/>
METAL PRODUCT MANUFACTURING	<input type="checkbox"/>	<input type="checkbox"/>
MACHINE-TOOLS	<input type="checkbox"/>	<input type="checkbox"/>
MECANIC MACHINERY AND EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>
ELECTRICAL EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>
ELECTRONICS, COMPUTING AND TELECOMMUNICATIONS	<input type="checkbox"/>	<input type="checkbox"/>
AUTOMOTIVE	<input type="checkbox"/>	<input type="checkbox"/>
AERONAUTICS/AEROSPACE	<input type="checkbox"/>	<input type="checkbox"/>
SHIPBUILDING	<input type="checkbox"/>	<input type="checkbox"/>
OTHER TRANSPORT	<input type="checkbox"/>	<input type="checkbox"/>
CONSTRUCTION	<input type="checkbox"/>	<input type="checkbox"/>
SERVICES	<input type="checkbox"/>	<input type="checkbox"/>
RECYCLING	<input type="checkbox"/>	<input type="checkbox"/>



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OTHERS (please, specify): .....	<input type="checkbox"/>	<input type="checkbox"/>
.....	<input type="checkbox"/>	<input type="checkbox"/>

### ACTIVITY AND PRODUCTS

Please define briefly your main activity and also your main products.

<b>Activity:</b> ..... .....
<b>Main products:</b> • ..... • ..... • .....

### 4. USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTs)

The objective of this question is to assess the use level of ICTs in your company for the development of activities that require communication with external organisations. For this purpose, please tick the appropriate box (1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5= Daily)

ICTs USE	1	2	3	4	5
E-MAIL	<input type="checkbox"/>				
INTERNET	<input type="checkbox"/>				
EDI (Electronic Data Interchange)	<input type="checkbox"/>				
E-COMMERCE	<input type="checkbox"/>				

Please indicate which are the main systems or tools used in your company for the communication and information exchange with external organisations (suppliers, customers, etc.).

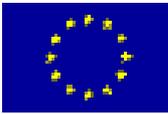
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### 5. PRODUCT DEVELOPMENT PROCESS (PDP)

<b>Does your company carry out any product development activity?</b>	Yes <input type="checkbox"/>	No <input type="checkbox"/>
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If yes, please indicate the stages of the Product Development Process (PDP) in which your company develops some activity.

PDP STAGES	
PRODUCT STRATEGY	<input type="checkbox"/>
IDEA GENERATION	<input type="checkbox"/>
FEASIBILITY ANALYSIS	<input type="checkbox"/>
PRODUCT REQUIREMENTS	<input type="checkbox"/>
PRODUCT/PROCESS DESIGN	<input type="checkbox"/>
VALIDATION AND DEMONSTRATION	<input type="checkbox"/>
PRODUCT LAUNCH	<input type="checkbox"/>



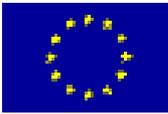
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### 6. TECHNOLOGIES AND TOOLS USED IN YOUR COMPANY

Please assess for the following technologies and tools supporting the Product Development Process (PDP) your interest and current use (Asses from 1 to 5 corresponding: 1=nothing/never and 5=much/always).

Note: At the end of the questionnaire (see Annex I) a brief definition of each of the following technologies and tools is included.

	INTEREST					USE				
	1	2	3	4	5	1	2	3	4	5
<b>ENVIRONMENT WATCH AND STRATEGY</b>										
Product Portfolio Management	<input type="checkbox"/>									
Technology watch and Benchmarking	<input type="checkbox"/>									
Idea Generation	<input type="checkbox"/>									
Market Analysis	<input type="checkbox"/>									
<b>PRODUCT REQUIREMENTS</b>										
Web based configuration and specification	<input type="checkbox"/>									
Quality Function Deployment (QFD)	<input type="checkbox"/>									
Conceptual Design	<input type="checkbox"/>									
Functional Analysis	<input type="checkbox"/>									
Value Analysis	<input type="checkbox"/>									
Optimisation Techniques	<input type="checkbox"/>									
<b>PRODUCT/PROCESS DESIGN</b>										
CAX (CAD, CAE, CAM,...)	<input type="checkbox"/>									
Feature Based Modelling	<input type="checkbox"/>									
Simulation	<input type="checkbox"/>									
Failure Mode and Effects Analysis (FMEA)	<input type="checkbox"/>									
Design for Manufacturing, Assembly, etc. (DFx)	<input type="checkbox"/>									
Finite Elements	<input type="checkbox"/>									
Complex Calculation	<input type="checkbox"/>									
Rapid Prototyping	<input type="checkbox"/>									
Virtual Reality	<input type="checkbox"/>									
Digital Mockup	<input type="checkbox"/>									
<b>QUALITY</b>										
Tolerancing Analysis	<input type="checkbox"/>									
Taguchi – DOE	<input type="checkbox"/>									
Quality Management	<input type="checkbox"/>									
Knowledge Management in PDP	<input type="checkbox"/>									



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PRODUCT DEVELOPMENT PROCESS(PDP) SUPPORT										
Stage Gate and Project Management	<input type="checkbox"/>									
Engineering Data Management (EDM)/Product Data Management (PDM)	<input type="checkbox"/>									
Support to Collaborative Design (Groupware/Workflow)	<input type="checkbox"/>									
<b>OTHERS (please, specify):</b>										
.....	<input type="checkbox"/>									
.....	<input type="checkbox"/>									

### 7. COLLABORATIONS AND EXTERNAL SUPPORT WITHIN THE PDP

**Does your company collaborate or receive support from external organisations in the Product Development Process (PDP) activities?**

Yes  No

If yes, please indicate what kind of organisations and quantify the collaboration/support level (1=Never; 2=Seldom; 3=Sometimes; 4=Often; 5=Usual collaborator)

TYPE OF ORGANISATION	1	2	3	4	5
SUPPLIERS AND CUSTOMERS	<input type="checkbox"/>				
OTHER COMPANIES (for example competitors)	<input type="checkbox"/>				
TECHNOLOGICAL CENTRES	<input type="checkbox"/>				
UNIVERSITIES	<input type="checkbox"/>				
CONSULTANCIES	<input type="checkbox"/>				
ENGINEERING COMPANIES	<input type="checkbox"/>				
Others (please, specify): .....	<input type="checkbox"/>				

Please mark the main obstacles that your company finds when you are going to collaborate or receive support from other organisations.

CONFIDENTIALITY	<input type="checkbox"/>
LACK OF ECONOMIC RESOURCES	<input type="checkbox"/>
LACK OF KNOWLEDGE OF THE SERVICES OFFER	<input type="checkbox"/>
NOT NEEDED	<input type="checkbox"/>
Other (please specify): .....	<input type="checkbox"/>



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### 8. PRODUCT DEVELOPMENT PROCESS (PDP) ACTIVITIES

Please identify in which stages of the PDP could your company need support from external organisations, assessing this need (Assess from 1 to 5, corresponding: 1=Not needed, 5=Absolutely necessary)

PDP STAGES	EXTERNAL SUPPORT				
	1	2	3	4	5
PRODUCT STRATEGY	<input type="checkbox"/>				
IDEA GENERATION	<input type="checkbox"/>				
FEASIBILITY ANALYSIS	<input type="checkbox"/>				
PRODUCT REQUIREMENTS	<input type="checkbox"/>				
PRODUCT/PROCESS DESIGN	<input type="checkbox"/>				
VALIDATION AND DEMONSTRATION	<input type="checkbox"/>				
PRODUCT LAUNCH	<input type="checkbox"/>				

#### PROBLEMS AND NEEDS INTO THE PDP

Please describe which are the main problems that your company finds in the PDP activities that carries out and that could be solved with external support.

• .....
• .....
• .....

### 9. SERVICES SUPPORTING THE PRODUCT DEVELOPMENT PROCESS (PDP)

Asses the use level for your company of the following types of services supporting the PDP (Assess from 1 to 5 corresponding: 1=Not necessary; 5=Absolutely necessary).

Nota: A brief explanation of each service is included at the end of the questionnaire.

SERVICES	1	2	3	4	5
COLLABORATION IN SPECIFIC PROJECTS OF PRODUCT DEVELOPMENT IN YOUR COMPANY	<input type="checkbox"/>				
TESTS AND SIMULATION	<input type="checkbox"/>				
SUPPORT TO PDP TOOLS IMPLEMENTATION	<input type="checkbox"/>				
TRAINING AND DISSEMINATION IN TECHNOLOGIES AND TOOLS SUPPORTING THE PDP	<input type="checkbox"/>				
CONSULTING DIRECTED TO THE IMPROVEMENT OF THE STRATEGY AND NEW PRODUCT DEVELOPMENT PROCESS	<input type="checkbox"/>				
RESEARCH AND DEVELOPMENT IN TECHNOLOGIES AND TOOLS SUPPORTING THE PDP	<input type="checkbox"/>				
Others (please specify):	<input type="checkbox"/>				
.....					
.....					

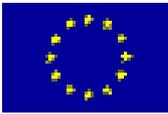




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### 12. ANNEX I: Technologies and tools supporting the Product Development Process (PDP)

ENVIRONMENT WATCH AND STRATEGY	
<b>Product Portfolio Management</b>	Techniques and tools to manage the strategic dimension of the product development activities within a company. New product projects evaluation and selection, fit into the business strategy, etc.
<b>Technology Watch And Benchmarking</b>	Technology watch implies activities oriented to search and identify technological trends and specific technologies relevant for the future of the company. Benchmarking: tools to measure and improve processes, products or services in an organisation, by comparing them to the best processes, products and services that may be found.
<b>Idea Generation</b>	Techniques and tools aimed at generating new products ideas systematically
<b>Market Analysis</b>	Techniques and tools to have access to and integrate customer opinions within the development process: conjoint analysis, focus groups, etc
PRODUCT REQUIREMENTS	
<b>Web Based Configuration And Specification</b>	Utilisation of Internet and other advanced IT tools for involving the customer in the development of the product specifications
<b>QFD</b>	Quality Function Deployment. Structured process that provides a mean for identifying the requirements of the client and translating them into product characteristics
<b>Conceptual Design</b>	Techniques and tools to support conceptual design at early stages of the product development process
<b>Functional Analysis</b>	Tool used to determine what the system/product needs to do. It includes consideration of specific design and technical approaches needed to fulfil the functional requirements of the product/system
<b>Value Analysis</b>	Method aimed at reducing the direct cost of a product by identifying and eliminating unnecessary functions, and examining the alternative means to achieve the selected product functions
<b>Optimisation Techniques</b>	Tools that help the designer to search and identify best candidate from a set of alternatives without the need of enumerating and evaluating explicitly all possible cases
PRODUCT/PROCESS DESIGN	
<b>Cax (CAD, CAM, CAE, CAPE)</b>	Computer Aided Design, Manufacturing, Engineering, etc.
<b>Feature Based Modeling</b>	Advanced function in CAD tools that includes not only geometric information but also information of the features
<b>Simulation</b>	Different types of simulations like simulation of manufacturing processes (casting, metal forming, etc), that allow to obtain optimised designs, reducing design time and costs (the simulations can eliminate costly trials during PDP), simulation of product functions, etc.
<b>Fmea</b>	Failure Mode and Effects Analysis: engineering quality method that helps to identify and count weak points in the early conception phase of products and processes.
<b>Dfma</b>	Design for Manufacturing and Assembly. These techniques take into consideration the methods of manufacture and assembly of a product during the design process
<b>Finite Elements</b>	Analysis to predict the effort and deformation internally supported by a piece subjected to different external conditions
<b>Complex Calculation</b>	Design calculations that need the support of High Performance Computers, parallel processing, etc
<b>Rp – Rapid Prototyping</b>	Term that cover a range of techniques which convert a 3D CAD model of an object into a physical model. Complex shapes, difficult and costly with traditional CNC prototyping, can produced in one operation with these techniques. Includes concept modelling (3D printers) as the cheapest solution.
<b>Virtual Reality</b>	3D visualisation of products or processes. It may be used for design or demonstration purposes
<b>Digital Mockup</b>	Computer-based description of a product that is used throughout the entire development process as a basis for making decisions about the development of the product. DMU is concentrated in three areas: description of the structure of a product, visualisation of a product in a three-dimensional geometry system, performance of simulations on the basis of geometric information.



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QUALITY	
<b>Tolerancing Analysis</b>	Tolerancing design and analysis is the process of selecting correct tolerances (dimensional and geometrical) of a designed element in order to avoid future manufacturing and assembly problems
<b>Taguchi – Doe</b>	Statistical techniques used to improve the quality of products and process designs, study the effects of multiple factors (i.e.- variables, parameters, ingredients, etc.) on the performance, and solve production problems by objectively laying out the research experiments.
<b>Quality Management</b>	Application of quality management techniques and tools (TQM, Six Sigma, etc) within the product development process
<b>Knowledge Management In Pdp</b>	Application of knowledge management methodologies, techniques or tools within the PDP.
PRODUCT DEVELOPMENT PROCESS (PDP) SUPPORT	
<b>Stage Gate And Project Management</b>	Techniques and tools to manage product development projects. Stage gate approach based on go/kill decision points between critical phases of the development process
<b>EDM/PDM</b>	Engineering Data Management/Product Data Management. Systems to handle data of an evolving product description throughout the technical data flow, from design to commercialisation.
<b>Support To Collaborative Design (Groupware/Workflow)</b>	ITC platforms that facilitate product development activities in distributed environments (partners or team members in different locations)

### 13. ANNEX II: Services supporting the Product Development Process (PDP)

<b>Collaboration in specific projects of product development in your company</b>	Develop any type of components or products for industrial companies or collaborate with them in this activity by using technologies and techniques supporting the PDP
<b>Tests and simulation</b>	Carry out product tests or simulations for companies
<b>Support to PDP tools implementation</b>	Help companies to implement specific technologies or techniques in their own product development processes to
<b>Training and dissemination in technologies and tools supporting the PDP</b>	Training courses and dissemination activities (conferences, seminars, etc) on subjects related to product development process improvement and the tools and techniques useful to do so
<b>Consulting directed to the improvement of the strategy and new product development process</b>	Consulting to companies on how to improve their overall product development process. It can include an audit of the PDP, recommendations and action plans
<b>Research and development in technologies and tools supporting the PDP</b>	Research activities aimed at increasing knowledge (with no direct commercial purpose or application) in any of the technologies and techniques supporting the PDP and development of technologies and techniques with application within the PDP. It includes software development.

**THANK YOU FOR YOUR CONTRIBUTION**