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## About the project

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**Eumecha-pro** is a Coordination Action funded by the European Commission under the 6th Framework Programme (NMP). The project has started on April 1st 2005.

**Eumecha-pro will develop industry roadmaps and research roadmaps.**

- The industry roadmaps will provide a **structured view on future industrial expectations** and will be established for different production equipment sectors.
- The **emerging technologies and integrated design approaches in the research roadmaps will be associated to industry's requirements and will reveal new industrial opportunities.**
- On the other hand, the **industrial roadmaps will orient research towards market needs.**
- The **research roadmaps will furthermore provide a common framework for an efficient co-ordination of Europe 's research resources.**

**Eumecha-pro will promote the mechatronics design paradigm in industry.** Best practices of mechatronic design will be identified and spread through industry-oriented workshops.

**Eumecha-pro will strive towards a better educational framework that delivers excellent mechatronic engineers to the manufacturing industries.** Mechatronics education requirements and approaches will be analysed, resulting in a European vision on how education can be improved and be made more coherent across Europe .

**Dissemination and exchange of information will take place through the internet and publications as well as through small committee network meetings.**

Furthermore, eumecha-pro will improve the coordination of various R&D funding mechanisms, in particular by feeding its deliverables into the "EUREKA Factory" platform and the European Commission's *MANUFUTURE* initiative.

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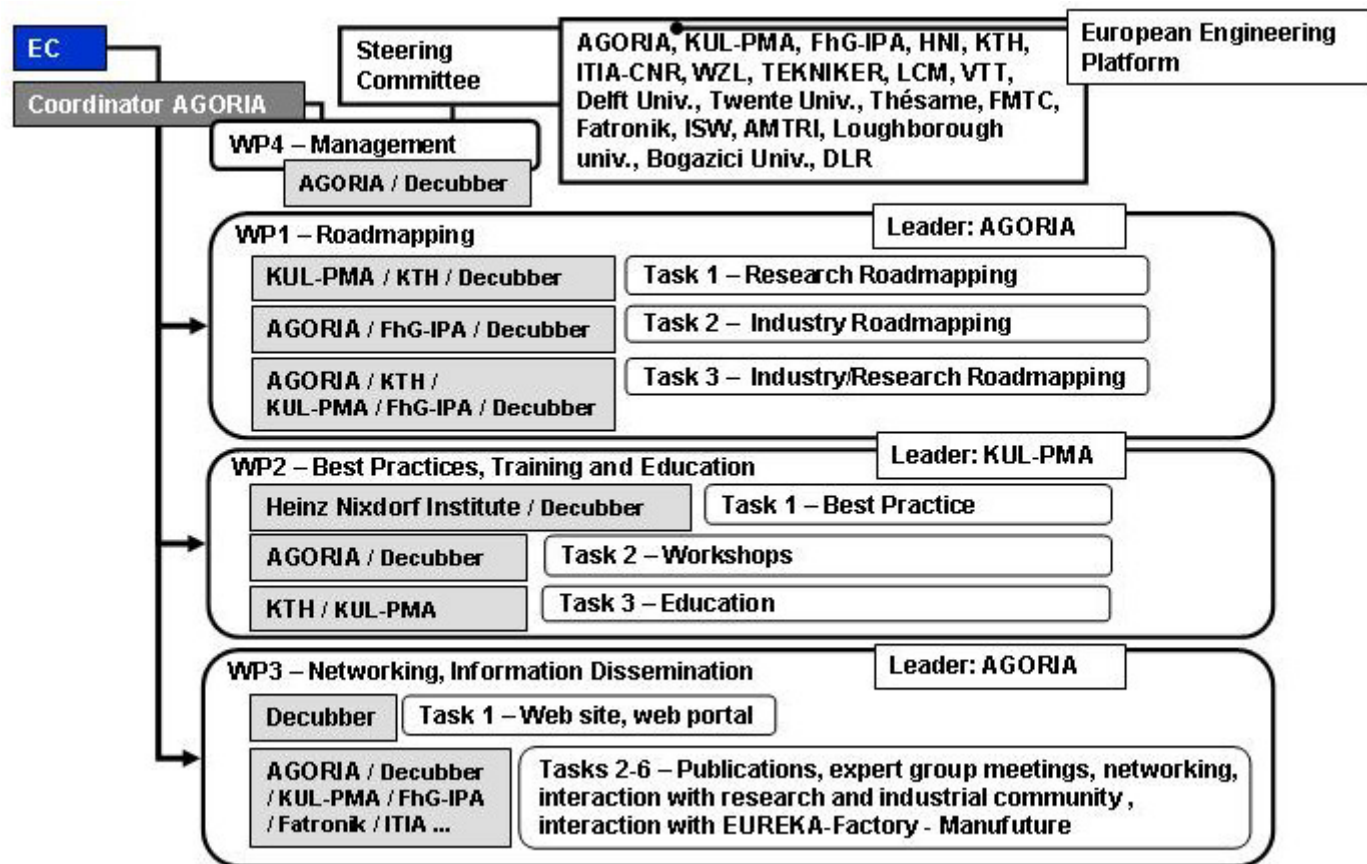
## Contact

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eumecha-pro secretariat: Chris Decubber  
Phone + 32 2 253 93 62  
E-mail: [secretariat@eumecha.org](mailto:secretariat@eumecha.org)

postal address: AGORIA  
Mechanical & mechatronical  
engineering  
Diamant Building  
Boulevard A. Reyers Laan 80  
B-1030 Brussel  
Belgium

## Organisation / activities



## Work package 1: Roadmapping

**Roadmapping:** Identify industry roadmaps, research roadmaps and the relation between both visions.

**Industry roadmaps** will provide a structured view on future industrial expectations and will be established for different production equipment sectors and related machinery and component sectors:

- Machine tools
- Textile machinery
- Factory Automation
- Productronics (Equipment for manufacturing electronics components)
- Agricultural machinery
- Civil construction
- Controls, drives
- Transmissions
- Compressors - pumps

The industry roadmaps will focus on functional, regulatory and economic requirements of production equipment, such as:

- Productivity
- Accuracy
- Ergonomics
- Safety
- Cost
- Noise
- Flexibility
- Autonomy
- Sustainability

Research roadmaps will reflect the research objectives, visions and capabilities of the European mechatronics research community.

The **research roadmaps** will therefore focus more on enabling technologies (or “building blocks”) and the mechatronic approach to combine these enabling technologies:

- System elements

Essentially, this is the hardware and software that constitutes the mechatronic system. (Sensors, actuators, control system, human machine interface, structural elements or components)

- System design methods and tools

This refers to the methods and tools that are relevant to the mechatronic design approach. (Integrated design and simulation environments, modelling tools,...)

- Phenomena

Vibration, friction, motion... In order to optimally fulfil the functional requirements (listed above) these phenomena are controlled in an integrated way.

The contribution from the research roadmaps to the industry roadmaps will be analysed and identified. The emerging technologies and integrated design approaches in the research roadmaps will be associated to industry's requirements and will reveal new industrial opportunities. On the other hand, the industrial expectations will drive research towards market needs and thus assure a high industrial usability and relevance.

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## **Work package 2: Best practices, training and education**

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Eumecha-pro will identify best practices of mechatronic design of production equipment and will promote these examples through industry-oriented workshops.

The requirements of the manufacturing equipment industries with respect to skills and education will be identified. Mechatronics education approaches will be analysed, resulting in a European vision on how education across Europe can be improved and made more coherent (and this way also facilitating the mobility of students).

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## **Work package 3: Networking, information dissemination**

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Eumecha-pro will support the networking of research teams in particular technological areas. Dissemination and exchange of information will take place through internet, publications... as well as small committee network meetings.

The research roadmaps will include references towards ongoing and envisaged research in the mechatronics research community, this way providing a common framework for an efficient co-ordination of Europe 's research resources.

Eumecha-pro will increase the complementarity of various R&D funding mechanisms, in particular by feeding its views into the “EUREKA Factory” platform. The EUMECHA-PRO activity will furthermore be strongly interfacing with the European Commission's *MANUFUTURE* initiative.

Timing

	2005												2006												2007				
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5			
	Year 1												Year 2																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				
<b>WP1: Roadmapping</b>																													
<b>Task 1: Research mapping</b>																													
Identify research objectives (and comment industrial objectives)	█																												
Synthesis of research objectives into research roadmaps	█																												
Compile Deliverable "Research roadmapping"													█ d																
<b>Task 2: Industrial expectations mapping</b>																													
Identify industrial expectations (and comment research objectives)	█																												
Synthesis of industry objectives into industry roadmaps	█																												
Compile Deliverable "Industry roadmapping"													█ d																
<b>Task 3: Industry and research roadmapping</b>																													
Prepare the roadmapping kick-off meeting																													
Roadmapping kick-off meeting	█ m																												
Analyse the research objectives and clarify their possible contribution to industry objectives and requirements	█																												
Prepare sectoral roadmap workshops	█																												
Sectoral roadmapping workshops													█ m																
Prepare overall roadmapping meeting													█ m																
Roadmapping meeting													█ m																
Compile deliverable "Production systems: Industrial and research roadmapping"													█ D																
<b>WP2: Best practices, Training &amp; Education</b>																													
<b>Task 1: Best Practices</b>																													
Collect examples of best practice in mechatronics	█																												
Make a selection of the 'best practice' proposals	█																												
Analysis of 'best practice' proposals													█ m																
Compile deliverable 'Mechatronics, best practices and draft roadmap for design tools and methods'													█ d																
<b>Task 2: Workshops</b>																													
Meeting for planning and preparing mechatronics workshops													█ m																
Organisation of workshops													█ w w w w w w w																
<b>Task 3: Education - curriculum</b>																													
Collection of information on mechatronic curricula (primarily across Europe, secondly elsewhere)	█																												
Prepare a draft report on Mechatronics education	█																												
Prepare a draft report on industry's needs with respect to training and education	█												█ d																
Prepare the first Mechatronics training and education meeting	█												█ d																
First mechatronics education expert group meeting													█ m																
Compilation of Deliverable 'Establishing a European common vision on mechatronics education'													█ d																
<b>WP3: Networking - Information Dissemination</b>																													
<b>Task 1: Web site - web portal</b>																													
Electronic Dissemination of WP1 results - web site + web portal	█ d																												
<b>Task 2: Publications</b>																													
Publication - roadmapping													█ d																
<b>Task 3: Participation at conferences</b>																													
Participation at conferences - presentation of results																													
<b>Task 4: Expert group meetings</b>																													
Organisation of expert group meetings around specific topics													█ m m m m m																
<b>Task 5: Interaction with EUMECHA-PRO Community</b>																													
<b>Task 6: Interaction with EUREKA - Manufature platforms</b>																													

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**Consortium**


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**AGORIA** (Project Coordinator)  
Mechanical & mechatronical engineering  
Diamant Building; Boulevard A. Reyers Laan 80;  
B-1030 Brussel; Belgium  
[www.agoria.be](http://www.agoria.be)

Jos Pinte  
[jos.pinte@agoria.be](mailto:jos.pinte@agoria.be)



**KU Leuven – Department of Mechanical Engineering, Division PMA**  
Celestijnenlaan 300B  
B-3001 Heverlee; Belgium  
[www.mech.kuleuven.be/pma](http://www.mech.kuleuven.be/pma)

Prof. Hendrik Van Brussel  
[hendrik.vanbrussel@mech.kuleuven.ac.be](mailto:hendrik.vanbrussel@mech.kuleuven.ac.be)

Eric Demeester  
[eric.demeester@mech.kuleuven.ac.be](mailto:eric.demeester@mech.kuleuven.ac.be)



**Decubber Project Assistance**  
Vissersstraat 12 b.22  
B-1800 Vilvoorde; Belgium  
[www.decubber.com](http://www.decubber.com)

Chris Decubber  
[chris.decubber@decubber.com](mailto:chris.decubber@decubber.com)



Institut  
Produktionstechnik und  
Automatisierung

**Fraunhofer Institute for Manufacturing Engineering and Automation IPA**  
Nobelstraße 12  
D-70569 Stuttgart; Germany  
[www.ipa.fhg.de](http://www.ipa.fhg.de)

Christoph Schaeffer  
[cfs@ipa.fraunhofer.de](mailto:cfs@ipa.fraunhofer.de)



**University of Paderborn – Heinz Nixdorf Institute – Computer Integrated Manufacturing**  
Fürstenallee 11  
D-33102 Paderborn; Germany  
[www.hni.upb.de/rip](http://www.hni.upb.de/rip)

Daniel Steffen  
[dsteffen@hni.uni-paderborn.de](mailto:dsteffen@hni.uni-paderborn.de)



**KTH – The Royal Institute of Technology**  
Dept of Machine Design  
Mechatronics Lab  
S-10044 Stockholm; Sweden  
[www.md.kth.se/div/mda/](http://www.md.kth.se/div/mda/)

Prof. Jan Wikander  
[jan@md.kth.se](mailto:jan@md.kth.se)



**ITIA – CNR**  
Via Lombardia 20/A  
I-20131 Milano; Italy  
[www.itia.cnr.it](http://www.itia.cnr.it)

Giacomo Bianchi  
[g.bianchi@itia.cnr.it](mailto:g.bianchi@itia.cnr.it)



**WZL RWTH Aachen**  
Herwart-Opitz-Haus  
Steinbachstraße 53B  
D-52074 Aachen; Germany  
[www.wzl.rwth-aachen.de](http://www.wzl.rwth-aachen.de)

Andreas Schmidt  
[A.Schmidt@wzl.rwth-aachen.de](mailto:A.Schmidt@wzl.rwth-aachen.de)



**TEKNIKER**  
Apdo. 44  
Avda. Otaola 20  
E-20600 Eibar · Guipúzcoa; Spain  
[www.tekniker.es](http://www.tekniker.es)

Javier Arzamendi  
[jarzamendi@tekniker.es](mailto:jarzamendi@tekniker.es)



**LCM – Linz Centre of Mechatronics**  
 Altenbergerstraße 69  
 A-4040 Linz; Austria  
[www.lcm.at](http://www.lcm.at)

Prof. Rudolf Scheidl  
[rudolf.scheidl@jku.at](mailto:rudolf.scheidl@jku.at)  
 Stefan Dierneder  
[stefan.dierneder@lcm.at](mailto:stefan.dierneder@lcm.at)



**VTT – Technical Research Centre of Finland**  
 VTT Electronics  
 P.O. Box 1100; Kaitoväylä 1  
 FI-90571 Oulu; Finland  
[www.vtt.fi](http://www.vtt.fi)

Mikko Sallinen  
[Mikko.Sallinen@vtt.fi](mailto:Mikko.Sallinen@vtt.fi)



**Delft University of Technology**  
 3mE, Dept. of Precision and Microsystems  
 Engineering  
 Mekelweg 2,  
 NL-2628 CD Delft; The Netherlands  
[www.ocp.tudelft.nl/am](http://www.ocp.tudelft.nl/am)  
[www.3me.tudelft.nl](http://www.3me.tudelft.nl)

Prof. Hans Langen  
[h.h.langen@wbmt.tudelft.nl](mailto:h.h.langen@wbmt.tudelft.nl)



**University of Twente – Drebber Institute**  
 Control Laboratory, EL/CE  
 Faculty of Electrical Engineering,  
 Mathematics & Computer Science  
 University of Twente  
 P.O. Box 217  
 NL-7500 AE Enschede; The Netherlands  
[www.drebbel.utwente.nl](http://www.drebbel.utwente.nl)

Prof. Job van Amerongen  
[J.vanAmerongen@utwente.nl](mailto:J.vanAmerongen@utwente.nl)  
 Peter Breedveld  
[P.C.Breedveld@ewi.utwente.nl](mailto:P.C.Breedveld@ewi.utwente.nl)



**THESAME Mécatronique et Management**  
 Immeuble "Le Salève"  
 C. U. F. R. A.  
 F - 74160 ARCHAMPS; France  
[www.thesame-innovation.com](http://www.thesame-innovation.com)

Olivier de Gabrielli  
[odg@thesame-innovation.com](mailto:odg@thesame-innovation.com)



**FMTC – Flanders' Mechatronics  
 Technology Centre**  
 Celestijnenlaan 300 D  
 B-3001 Leuven; Belgium  
[www.fmtc.be](http://www.fmtc.be)

Marc Engels  
[marc.engels@fmtc.be](mailto:marc.engels@fmtc.be)



**FATRONIK**  
 Pol.Ind. Ibaítarte, 1  
 P.O.Box 160  
 20870 Elgoibar (Gipuzkoa); Spain  
[www.fatronik.com](http://www.fatronik.com)

Juanjo Zulaika  
[jzulaika@fatronik.com](mailto:jzulaika@fatronik.com)



**University of Stuttgart – ISW**  
 Seidenstraße 36  
 D-70174 Stuttgart; Germany  
[www.isw.uni-stuttgart.de](http://www.isw.uni-stuttgart.de)

Peter Pruscsek  
[peter.pruscsek@isw.uni-stuttgart.de](mailto:peter.pruscsek@isw.uni-stuttgart.de)



**AMTRI – The Advanced Manufacturing  
 Technology Research Institute**  
 Hulley Road  
 Macclesfield  
 Cheshire SK10 2NE  
 United Kingdom  
[www.amtri.co.uk](http://www.amtri.co.uk)

Andy de Vicq  
[devicq@amtri.co.uk](mailto:devicq@amtri.co.uk)



**Loughborough University**  
**Holywell Mechatronics Research Centre**  
Wolfson School of Mechanical & Manufacturing  
Engineering,  
Loughborough, Leics LE11 3TU; United Kingdom  
[www.mechatronics.org.uk](http://www.mechatronics.org.uk)

Prof. Robert Parkin  
[R.M.Parkin@lboro.ac.uk](mailto:R.M.Parkin@lboro.ac.uk)



Ana Sayfa

**Bogazici University**  
Bebek  
TR-34342 Istanbul; Turkey  
[mecha.ee.boun.edu.tr](http://mecha.ee.boun.edu.tr)

Prof. Okyay Kaynak  
[kaynak@boun.edu.tr](mailto:kaynak@boun.edu.tr)



**DLR – Institute of Robotics and Mechatronics**  
Oberpfaffenhofen  
D-82234 Weßling; Germany  
[www.robotic.dlr.de](http://www.robotic.dlr.de)

Prof. Gerd Hirzinger  
Fabian Breitenstein  
[fabian.breitenstein@dlr.de](mailto:fabian.breitenstein@dlr.de)