

FP7 Research PPPs INFORMATION DAY for the PPPs on 9 July 2010

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Project information			
<input checked="" type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	Next Generation Knowledge Management Environments and Business Assessment Tools for Adaptive Virtual Enterprises		
Project idea, objectives	<p>This project will use shared knowledge management technologies to coordinate interoperability between management tools in collaborative, distributed manufacturing virtual organisations/enterprises, thereby supporting management of tangible assets (materials, components, products, manufacturing resources) and intangible assets (business intelligence, market intelligence, manufacturing information, plans and strategies) across the value chain.</p> <p>Objectives:</p> <ul style="list-style-type: none"> • Utilise shared collaborative manufacturing knowledge available to heterogeneous enterprise management and information systems to support decision-making. • Embed experience-based, adaptive strategies for collaborative manufacturing knowledge in shared knowledge repositories accessible to VO/VE partners. • Apply novel, flexible mixed-reality applications to present operational manufacturing information to VO/VE partners to support collaborative, real-time decision making. Tools will include, but may not be limited to: <ul style="list-style-type: none"> ○ Novel, accessible presentation of collaboration status; ○ Simulation to evaluate proposed decisions; ○ Tools to evaluate, propagate and present predictions of risk and uncertainty in collaborative manufacturing enterprises, and to support application of experience-based, adaptive risk mitigation strategies. 		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partner 1	<ul style="list-style-type: none"> • SME participant (actual or prospective) in collaborative manufacturing 		
Partner 2	<ul style="list-style-type: none"> • Larger enterprise participant (actual or prospective) in collaborative manufacturing 		

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Project information			
x Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	A multiscale approach for virtual production and production planning		
Project idea, objectives	<p>The modeling and simulation of fundamental production processes has been an active research field of production engineering and of applied mathematics for more than twenty years. The same holds true for the multibody simulation of machine tools and robots. In contrast, the examination of interactions between process, machine and workpiece has only been tackled in recent years.</p> <p>In addition, over the past years significant progress has been made in the description of global production and material flow. The next step on the way to automatic tools for the planning and reconfiguration of complex production processes is the development of a multi-scale mathematical standard model. For this, a common effort of production engineering, mathematics and computer sciences is required:</p> <ul style="list-style-type: none"> • On the lowest level this concerns the modeling of elementary production processes such as welding, drilling, or milling under consideration of the executing machine tool or the corresponding manipulator. • On the mean level these processes are combined to work cells consisting of a group of robots, machine tools, holding equipment and conveyor belts. Here, mathematical tasks are in particular mixed-integer optimisation as well as path-planning. • Finally, these work cells are joined to form complex production systems. Here, the main tasks are the description of the workflow and the development of a corresponding language <p>The advantage in the development of such a concept lies in the fact that it allows for the consideration of improved simulation and optimisation techniques on the different scales. In connection with suitable sensors the factory model could be used for the control and monitoring of the entire production process. It would yield an intelligent error control and could be used for the controlled ramp-up and ramp-down of the facility. By the coupling with corresponding stock-keeping software a business-to-manufacturing integration of the production process could be reached. In other words: The numerously conjured digital enterprise can become reality.</p>		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partner	<ul style="list-style-type: none"> • looking for further industrial partners who plan to use virtual production techniques • looking for further scientific partners for the modelling of production processes as well as material and work flow 		

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Contact person			
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Project information			
X Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	A bi-polar cultural approach towards idea development in the Front-End of Innovation		
Project idea, objectives	<p>Social, political and economic perspectives supported by a cultural understanding of societies and regions are the cornerstones for a more comprehensive external analysis. Extreme trends and developments in nations' political, economical and social situation are a source for service and product idea development.</p> <p>This project proposes a product planning methodology using a bottom-up approach of cultural case studies. Potential areas for innovation can be identified by mapping case studies, illustrating extreme trends and developments in certain societies, on a bi-polar scale, supported by "Cultural Dimensions".</p> <p>Given the potential for a methodology for strategic goal finding based on social, cultural and political differences on a bi-polar scale, future case studies are to be developed. These case studies needs to be internationally diverse to ascertain that a categorical top-down approach can be applied as a source for external analysis in the generation of innovative system / product ideas, while considering prevalent economic, social and political status quo of their cultural contexts.</p>		
Partner search description			
Type = Company/SME/Research organisation/university + desired skills/knowledge			
Partner 1	•		
Partner 2	•		

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Project information			
<input checked="" type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	IFAMaS: Intelligent Failure Analysis for Manufacturing Systems		
Project idea, objectives	<p>Need</p> <ul style="list-style-type: none"> ○ Manufacturing systems and processes integrate a large number of components, such as controlling components, drive, components, actuators or sensors. This makes them complex by nature. ○ Although the most of the components are standardized assemblies, the composition of components within the comprehensive system usually follows a unique design. ○ Failures in manufacturing systems are in most cases caused due to interoperability aspects and interface issues of its components <p>Vision and Objectives</p> <ul style="list-style-type: none"> • Based on a semantic description of manufacturing systems and components, the project IFAMaS will develop semantic technologies that enable the improved and efficient failure analysis. <div style="text-align: center;"> <p>The diagram illustrates a layered architecture. On the left, four stacked boxes represent the layers: 'User Interaction Layer', 'Processing & Reasoning Layer', 'Connecting Middleware', and 'Manufacturing System & Components'. The 'Manufacturing System & Components' layer contains a sub-diagram of four interconnected blocks. To the right of these layers is a vertical box labeled 'Semantic Model'.</p> </div>		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partner 1	SME/Company in the relevant field		
Partner 2	University/research organisation in the field of user interaction components		

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Contact person			
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Project information			
<input checked="" type="checkbox"/> Factories of the Future			
Topic/Title	Tool for Implementation of Autonomous Control in Intralogistic and Manufacturing Processes		
Project idea, objectives	<p>The dynamic and structural complexity of logistic networks makes it very difficult for a central planning and control instances to provide all necessary information for an adequate decision-making. Decentralised coordination of autonomous logistic objects (e.g. parts on the production line) in a heterarchical structure has the potential to solve this challenge. The autonomy of these objects can be realised by novel communication technologies such as identification technologies, real-time communication technologies as well as indoor and outdoor positioning technologies. These and others ICT technologies permit the implementation of new control strategies like autonomous decentralised control systems for intralogistic processes.</p> <p>The autonomy as a new control paradigm for logistic processes as well as its possible implementation has been researched for the past six years at the BIBA in basic research projects as well as in first practical applications. The results have shown that autonomous control contributes to optimised flows in the supply chain and within the manufacturing processes. At the same time there is a strong interest in the industrial sector to use the autonomous systems in order to optimise the intralogistic / manufacturing flows. However the current state of the art requires a great implementation effort which most enterprises cannot afford. Therefore the main objective of the FoF project will be to develop a configuration tool which facilitates the application process. The project is intended to be submitted in the Call FoF.NMP.2011-2 "Cooperative machines and open-architecture control systems". It aims at further development, implementation and commercialisation of the autonomous control mechanisms in manufacturing enterprises and for their benefit. This will be done in cooperation with European industrial partners keeping in mind their requirements. The strategic aim is to assure the competitive advantage of European companies on the international market.</p>		
Partner search description			
Type = Company/SME/Research organisation/university + desired skills/knowledge			
Partner 1	<ul style="list-style-type: none"> Coordinator for the project, academic partners with the expertise in sensor technology, ICT technology, ... 		
Partner 2	<ul style="list-style-type: none"> Industrial partners from the traditional (e.g. manufacturing, logistics) and emerging industrial sectors (e.g. wind energy) who are interested in the implementation of autonomous control in order to optimise their production processes and require special tools to enable this implementation. 		

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Project information			
<input checked="" type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	PRIMUS – PRedictive Industrial Maintenance Using Smart Agents		
Project idea, objectives	<p>PRIMUS will develop an innovative modern scalable maintenance concept that will use a distributed network of smart agents.</p> <p>The objectives of PRIMUS are:</p> <ul style="list-style-type: none"> – Research pre-emptive maintenance concepts and create an advanced algorithm for predicting failures, based on behavioural trends of the machines and the underlying communication – Define a standard for retrieval of diagnostics data from industrial machines and the language for defining abnormal responses – Model and Develop a central control system of a distributed factory that generates optimized corrective measures for typical failure scenarios per site – Develop a smart maintenance agent embedded in the communication infrastructure of the production-line to monitor abnormal traffic patterns that indicate upcoming failures <p>PRIMUS will improve manufacturing performance using advanced predictive maintenance methods. It will increase management efficiency of factories both on site and off site, thus creating a platform for a virtual factory line, taking into consideration the entire environment of manufacturing.</p>		
Partner search description			
Type = Company/SME/Research organisation/university + desired skills/knowledge			
Partner 1 – Company	<ul style="list-style-type: none"> • Industrial automation equipment vendor 		
Partner 2 – Company/SME	<ul style="list-style-type: none"> • IT vendor for production life-cycle management tools 		
Partner 3 – Company	<ul style="list-style-type: none"> • A large-scale manufacturer with several production sites 		
Partner 4 – Standardisation Body	<ul style="list-style-type: none"> • Standardisation entity for the device diagnostics interface 		

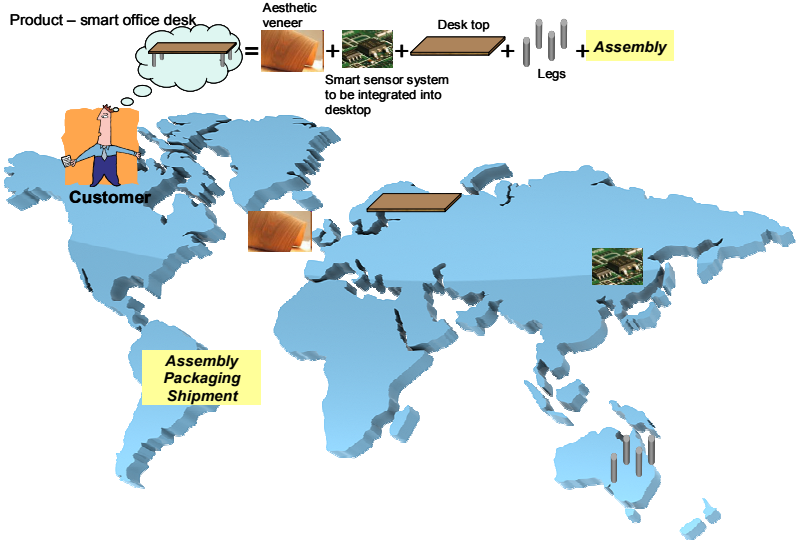
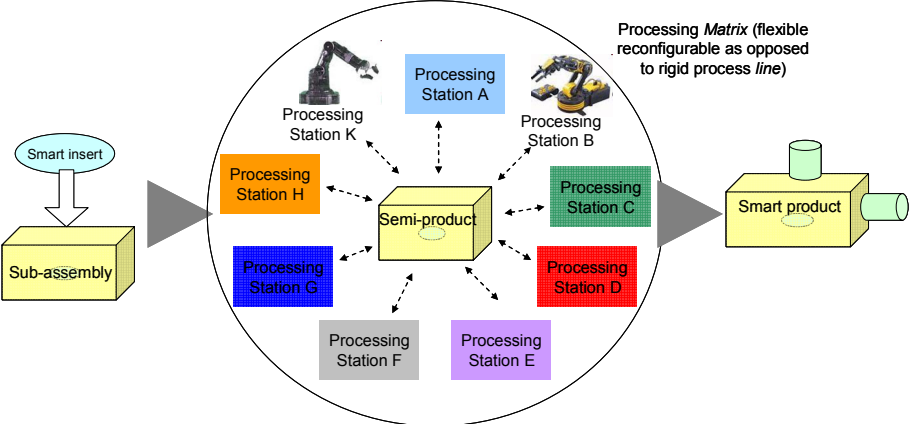
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Project information			
x Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	PPP FoF-ICT-2011.7.3d Virtual Factories and Enterprises <i>ComVantage – Collaborative Manufacturing Network for Competitive Advantage by Distributed Decision Support</i>		
Project idea, objectives	<ul style="list-style-type: none"> • Enriching existing social network technologies with product information • Mobile collaboration forms for virtual factories • Distributed decision support • Visualizing credibility • Linked Data application for collaborative production scenarios • Shaping rules for agile project-based networks 		
Partner search description			
Type = Company/SME/Research organisation/university + desired skills/knowledge			
Partner 1	<ul style="list-style-type: none"> • Type = Company / SME • Desired skills = Security & privacy in cloud-based networks, development and research 		
Partner 2	<ul style="list-style-type: none"> • Type = Company / SME • Desired skills = Legal contracting modelling 		
Partner 3	<ul style="list-style-type: none"> • Type = Research organization / University • Desired skills = Trust of cloud-based networks 		
Partner 4	<ul style="list-style-type: none"> • Type = Research oriented enterprise / Enterprise oriented research • Desired skills = Evaluation of economic aspects and risk management 		
Partner 5+	<ul style="list-style-type: none"> • Type = Company / SME • Desired skills = Collaborative Industry(s) 		

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Project information			
<input type="checkbox"/> Factories of the Future			
Topic/Title	FoF-ICT-2011.7.1 Smart Factories: energy-aware, agile manufacturing and customisation		
Project idea, objectives	<p>Enterprises in all branches of industry are being required to become more customer centric, yet, at the same time, increasing competitive pressure dictates that costs must also continue to decrease. Mass Customization and Personalization are strategies developed to address this challenge by producing goods and services meeting individual customer's needs with near mass production efficiency. At same time, Globalisation have promoted the creation and consolidation of the so-called Extended Enterprises (EE), which transcend the single enterprise domain and build meta-enterprises. These meta-enterprises can be broadly defined as networks of complementary companies that work jointly on providing more value to their customers and improving their human, knowledge, operational and structural capitals.</p> <p>Enterprises can greatly improve their decisions by managing orders properly within their supply chain. Today, the next step in the evolution of order promising is profitable to promise (PTP). PTP makes sure that orders are profitable for your company to accept. PTP is a company-defined, rules driven process that helps you make better business decisions and respond faster to profitable new opportunities.</p> <p>In this projet we want to use the concept of PTP in a Collaborative environment, developing a network of collaborative firms with the necessary core competencies to reach the market on time with the right products. We want to approach PTP focusing in the capability of each enterprise to respond the needs of customers, including activities like manufacturing, distribution, warehousing, etc.</p>		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partner 1	University or RTD with a role of Coordinator and experienced on: <ul style="list-style-type: none"> • logistics transportation and supply chain management and wide experience in Mass Customization. 		
Partner 2	<ul style="list-style-type: none"> • companies: Develop the module of PTP in a collaborative environment focusing on capacities, time to response, distribution along the whole supply chain. Wrap the existing legacy applications to solve the technical interoperability problem during interaction with the underlying legacy business processes. It must also develop Methods & Tools for Data Capture & Management to ensure confidentiality of data		
	SME belonging to related supply chain: Develop a network of collaborative firms in order to participate in the developing of PTP tool in a collaborative environment taking in consideration all the constraints of manufacturing processes, orders received, typology of customers, and the flexibility to change this constraints in order to maximize the profitability in the Demand fulfilment process. This partners will execute Demonstration activities, by particularly defining and developing pilot implementations in industrial settings		

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Contact person			
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Project information			
<input type="checkbox"/> Factories of the Future			
Topic/Title	FoF-ICT-2011.7.3 Virtual Factories and enterprises		
Project idea, objectives	<p>Virtual Prototyping is a technique used by big companies to design a complex product and its assembling pieces in a previous stage to its manufacturing. It involves simulation technologies that allow changes to the design and to the intermediate production processes previously to its industrial application. This technology allows saving money and efforts, and is a key factor in any new development that can involve multiple production stages. The major objective of this new concepts is to improve the ability of enterprises to react faster and cheaper to changing customers´ needs and to address the heterogeneity of demand more efficiently</p> <p>At the moment, these tools are extremely expensive although they have a potential use for SMEs that can be a key factor in their short-term manufacturing process development.</p> <p>The objective of this project is to help SME to meet the requirements of individual customers by leveraging the advantages of collaboration across the entire supply chain, information technology and techniques of virtual prototyping. This project is based on developing a network of collaborative firms with the necessary core competencies to reach the market on time with the right products. Developing a network of firms, requires a communication system to achieve a cooperative supported work, that enables companies to proactively consider all the productivity and quality problems along a value chain. Moreover, the design phase of the product will be supported by virtual prototyping techniques in order to improve the process of transfer customer wishes into concrete product specifications along the entire supply chain</p>		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partner 1	University or RTD with a role of Coordinator and experienced on logistics transportation and supply chain management and wide experience in Mass Customization and Virtual Prototyping.		
Partner 2	Develop the tools of virtual prototyping using Open Source software, and integrate this tools with manufacturing and logistics processes in a collaborative network of SME.		
	SME covering a number of distinct discrete manufacturing sectors (with special emphasis on sectors in which citizens play an important role, such as health, consumer, automotive, electronics, but also high-end equipment)		

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Project information			
<input checked="" type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	FoF-NMP-2011-2; FoF-ICT-2011-7.3		
Project idea, objectives	<p>Distributed Factory for Customised Manufacturing</p>  <p>Transformable Modular Collaborative Factory</p>  <p>Objectives:</p> <ul style="list-style-type: none"> • Agile methods for integrating ICT technologies into traditional sectors and manufacture of varied everyday 'inert' objects • Create augmented objects that collaborate with the factory during fabrication, assembly and validation 		

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| | <ul style="list-style-type: none">• Smart (ICT enhanced) products are traceable, contain info on what they are made of and how, disassembling and recycling instructions |
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Partner search description	
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Type = Company/SME/Research organisation/university + desired skills/knowledge	
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Partner 1	SME - Robotics & Industrial Automation
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Partner 2	SME - Applied Multi-touch, IT Systems & User Interfaces
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Partner 3	SME - Embedded Security solutions
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Partner 4	Research/Academia - Materials Science
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Project information			
<input type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	FoF.NMP.2011-3, Robots for automation of post-production and other auxiliary processes FoF.NMP.2011-5, Towards zero-defect manufacturing		
Project idea, objectives	<ul style="list-style-type: none"> • <i>Machining dynamics monitoring for the elimination of machining defects.</i> The Advanced Machining Technology Group (AMTG) in the University of Huddersfield has intensive experience in intelligent machining monitoring and control, especially in abrasive machining area. The AMTG has developed good facilities that can identify the signatures that represent different defect sources in terms of mechanical, thermal material behaviours during abrasive machining. This could provide precise information of machining performance which enables the defects to be eliminated from their roots. This is a vital step in achieving zero-defect in manufacturing. With state of art facilities, we can monitor machining force, vibration, acoustic emission and temperature during the processes. The signal range covers from stationary to 3 MHz. • <i>One-line geometrical error probe using acoustic emission technique.</i> To achieve high geometrical accuracy, it is important to know the real cutting edge position during machining processes. This is particularly true in grinding and polishing processes. A new technique developed in the AMTG enable us to detect cutting contact at less than 50 nm under full grinding speed. This is very useful for setting up machine for repair works or other post production processes, where the datum is on the machining surface. Such technique is also useful for quick machine set up and calibration, which would help the improvement of machining accuracy The AMTG is also equipped excellent facility enabling geometrical error to be measured in situ down to the nanometre accuracy level. 		
Partner search description			
Type = Company/SME/Research organisation/university + desired skills/knowledge			
Partner 1	<ul style="list-style-type: none"> • The AMTG would like to seek any partners who are working in the topic area: FoF.NMP.2011-3 		
Partner 2	<ul style="list-style-type: none"> • The AMTG would like to seek any partners who are working in the topic area: FoF.NMP.2011-5 		

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Contact person			
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Project information			
<input type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> European Green Cars Initiative			
Topic/Title	FOF.NMP.2011-6 Manufacturing chain for nano-phasesd components and coatings NMP.2011.2.1-1, Novel superconducting materials, architectures and process for electro-technical applications		
Project idea, objectives	<ul style="list-style-type: none"> • Development of a novel functional surface machining technique for eco-product design and manufacture. <p>The Advanced Machining Technology Group (AMTG) in the University of Huddersfield has extensive experience in precision machining for ultra precision engineering surface. The surface roughness can be lower than Ra 1 nanometre. Such ultra precision surface could be an essential element in the manufacturing chain for nano-phased component and superconducting materials coatings. The AMTG would like join the projects that require substrate surface preparation to such extreme high standard. The further intension of the AMTG is to develop a novel abrasive machining technique which could offer required engineering function on top of the ultra precision surface. It will have a great impact on friction and drag force deduction, heat transfer efficiency and surface self-cleaning, which will have great eco-benefits. The AMTG has developed good facilities that can support structural functional surface design and manufacturing. The objective of the project is to develop a novel reliable technology that can produce ultra precision functional engineering surface, which could demonstrate great eco benefits to the society.</p>		
Partner search description			
Type = Company/SME/Research organisation/university + desired skills/knowledge			
Partner 1	<ul style="list-style-type: none"> • The AMTG would like to seek any partners who are working in the topic area: FoF.NMP.2011-6 		
Partner 2	<ul style="list-style-type: none"> • The AMTG would like to seek any partners who are working in the topic area: NMP.2011.2.1-1 		

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Project information			
◆ Factories of the Future □ Energy-efficient Buildings □ European Green Cars Initiative			
Topic/Title	Excellent ramp-up management for towards zero-defect manufacturing		
Project idea, objectives	<ul style="list-style-type: none"> • development of a method for an excellent ramp-up management in small-series production and data rich environments • development of a pre-prognosis software tool for production processes • data analysis with data-mining methods • adaptable method for transfer to other sectors • application and demonstration with project partners from the industry 		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partner 1	<ul style="list-style-type: none"> • IT-Computer Sciences research institute: development/ application of software with focus on datamining and algorithms 		
Partner 2	<ul style="list-style-type: none"> • Industry partner from sectors, in which small batches, a high product variance and a data rich environment dominate production. 		
Partner 3	<ul style="list-style-type: none"> • Industry or Research partner: Machine tool manufacturers with process knowledge and machine control development 		