

FP7 INFORMATION DAYS for Research PPPs on 11+12 July 2011

Template project ideas

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Project information			
PPP <input type="checkbox"/> Factories of the Future <input type="checkbox"/> Energy-efficient Buildings <input type="checkbox"/> Green Cars			
Topic/Title	Compensation and Correction of Process and Operation Related Workpiece Deformations Using Adaptive Structures (COMDAS)		
Project idea, objectives	<p>In machining (turning, milling, ...) deviations in size, form and position between the cutting edge and the workpiece may have several reasons: Workpiece or tool deformations due to the cutting forces, the flexibility of light weight and thin walled parts, thermal expansions, and/or the geometry of the cutting process. In order to reach the required machining accuracy and productiveness, these deviations can be reduced in the following two ways:</p> <ol style="list-style-type: none"> 1. Preliminary determination of the expected mechanical and thermal deformations by using numerical analysis (FEM) and a numerical controlled correction of the machining parameters and the relative workpiece-tool position during the cutting process. 2. Measurement of the relative tool – workpiece movement and a real-time compensation using intelligent adaptronic elements in the cutting tool and/or in the clamping device. <p>In the project these compensation/correction methods will be theoretically investigated, systematised and assessed in terms of their suitability for the improvement of the cutting process.</p> <p>Because the proposed project is a demonstratioin targeted collaborative project the main objective is the choice, design and technical realisation of demonstrators being typical for the two different C/C directions. SMEs are invited to take place in the project's consortium and to propose adequate demonstrators.</p>		
Partner search description			
Type = Company/SME/Research organisation/university			
+ desired skills/knowledge			
Partners 1	SME/Research organisation/university for <u>project coordination</u> and management		
Partner 2, 3, ...	<u>Industrial partners</u> (desirably SMEs) which can contribute <u>demonstrators</u> for the project's objectives and can work for them		