

# **EUREKA PRO-FACTORY-PLUS**

## **Distribution of German Calls to Generate PRO-FACTORY-PLUS Proposals**

- High-Performance Production Processes for Tomorrow's Products -**
- Technology Innovations on the Way towards Smart Production -**

**33<sup>nd</sup> Call within the Framework Concept**

**“Research for Tomorrow's Production”**

**March 2013**

**of the**

**Federal Ministry of Education and Research (BMBF)**

**in**

**Bonn, Germany**

### **1. Preface**

The following national call will generate national collaborative projects, but it shall also apply to EUREKA PRO-FACTORY-PLUS collaborative projects with German coordinators/participants.

Latest manufacturing technologies are the basis of competitive production. For economically efficient production in the future, performance of manufacturing processes has to be improved continuously and these processes have to be further developed and optimized to meet new challenges. At the same time, new innovative approaches (e.g. based on combined processes) have to be developed and entirely new processes have to be given a chance. Development of high-performance production processes is the basis for Germany to extend core competences in the area of manufacturing technologies. In this way, processing trade is given the opportunity to increase the knowledge and technology lead in high-performance production processes over its competitors.

The present call marks the start of an extensive and longer-term funding program under the federal government's High-tech Strategy. Another call for proposals relating to the flexible production of individualized or complex products in the area of "Photonic Process Chains" is planned.

## **2 . Purpose of Funding, Legal Basis**

### **2.2 Purpose of Funding**

With the program "Research for Tomorrow's Production", BMBF funds cooperative and pre-competitive research projects to strengthen production in Germany. In this way, producing companies shall be enabled better to rapidly respond to changes and to actively co-design the change required. In particular, research in and with small and medium-sized enterprises (SME) is funded.

Within the framework of the action presented here, producing companies shall be supported in developing and introducing High-Performance Production Processes.

## **3. Subject of the Call**

New products require new production processes. For Germany to remain the leading supplier of innovative production technology in the future, this call is planned to fund innovative, environmentally compatible production processes suitable for series production. As these processes are to beat established production processes (according to DIN 8580) in terms of performance, they are referred to as high-performance production processes in this call. This call focuses on forming and cutting production processes. Moreover, generative processes are addressed. These processes are increasingly encountered in practice and offer promising processing opportunities. The process developments shall not be limited explicitly to metal materials. The high-performance production processes to be developed shall be characterized in particular by

- a considerably increased productivity,
- a considerably increased economic efficiency,
- a considerably increased resource efficiency,
- a considerable reduction of load acting on the environment and staff, and
- a considerably improved reproducibility and safety.

High-performance production processes in the sense of this call shall be processes fulfilling one or several of these criteria without adversely affecting compliance with the other criteria compared to traditional processes.

The following research and development aspects appear to be of particular urgency:

- Development of production processes superior to established processes. In particular, the focus shall be on the increase in efficiency of the production process within the limits of technical feasibility. Concepts based on existing technologies as well as entirely new concepts may be proposed.
- Development of production processes specially contributing to optimizing the process chain for the production of a product and, if possible (e.g. by the elimination of a production step), to shortening the production process, which will result in an increase in economic efficiency.
- Development of production processes characterized by a high resource efficiency (e.g. production of net-shape or near-net-shape parts, reduced material wear, reduced tool costs, and a longer service life of the tools).
- Development of production processes applicable to new materials / material composites (inhomogeneous material compositions, increased material hardnesses, production of defined surface states, minimization of dimensional and manufacturing tolerances).
- Combination of so far separate production processes in an integrated production process (hybrid production process).
- Development of robust production processes that considerably improve process availability and process and product quality.
- Development of production processes for the generation of entirely new material and product properties and products.

Development of high-performance production processes is inextricably linked to the development of the necessary machine and plant technologies to support the increased performance of the production process. Within the framework of the projects, production equipment developments necessary for testing the feasibility of the production process only will be funded. Research projects focusing on the development of production equipment for high-performance production processes will not be funded. Joining production and coating processes will only be funded, if they are combined with the above processes.

High-performance production processes require an adequate qualification of the staff. The joint projects are to generate process- and function-related knowledge that sustainably develops and supports the capabilities and skills of the staff.

The sketch is expected to outline concrete objectives based on the state of the art in line with the criteria for the description of high-performance production processes. By the end of the project, feasibility of the production process developed and compliance with the above criteria shall be demonstrated by a demonstrator.

Consortia reflecting several stages of the complete chain of values added or of the manufacturing of highly innovative products of high economic potential will be preferred.

#### **4. Beneficiaries**

Beneficiaries may be producing enterprises in Germany, in particular small and medium-sized enterprises (definition by the European Commission: [http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index\\_en.htm](http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-definition/index_en.htm)), universities, or non-university research institutions. Research institutions that are granted basic funding by the Federal Republic of Germany and the federal states may be granted funds for their additional expenditure under certain conditions only.

#### **5. Funding Prerequisites**

The prerequisite for funding is the interaction of several independent partners for the solution of joint research tasks (collaborative projects) that by far exceed the state of the art. At least one of the research and development aspects mentioned above in Section 3 must be in the focus of these collaborative projects. The projects are to initiate innovation processes and shall not exceed a duration of three years, if possible. Funding will be granted to collaborative projects exclusively, the partners of

which wish to produce the new products and production systems in Germany. Interdisciplinary research approaches and holistic solutions shall be implemented by the corresponding disciplines in cooperation.

## **6. EUREKA PRO-FACTORY-PLUS**

It is also possible to fund international cooperation projects on the topics given above. Cooperation will be supported, if a clear value added will be achieved by the joint investigation of the problem and entire branches or research fields will profit from this value added rather than single enterprises. The advantages of integrating foreign partners shall be outlined. The shares of the foreign partners will be funded via the corresponding national programs.

European cooperation in research for production under e.g. EUREKA and ERA-Net is desired. German consortia have the possibility to integrate foreign partners, if this is advantageous thematically or if research has to be complemented by contributions from other countries. Funding of German partners is subject to the conditions of this call. Foreign partners can be funded by their respective country. Support is rendered by the PRO-FACTORY-PLUS Working Group and the national contact office of the production-relevant MANUNET ERA-Net. Future EUREKA projects will be included in the EUREKA umbrella PRO-FACTORY-PLUS. Further information is available at [www.produktionsforschung.de](http://www.produktionsforschung.de).

### **6. Outline Proposal to be Submitted**

German partners in PRO-FACTORY-PLUS consortia are referred to the complete German text of the call under [www.produktionsforschung.de](http://www.produktionsforschung.de) for them to take into account all requirements to be complied with by their outline proposal.

**The call will be open until: 1<sup>st</sup> June 2013**

**Additional information may be obtained from**

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In a first step, a  
project outline of about 10 pages has to be submitted.