



**Manufacturing in FP7 Conference
16-17 January 2008, Cardiff University, UK**



Project Proposal within FP7 Cooperation Work Programme

Theme 4: Nanotechnologies, Materials and new Production technologies - NMP

Activity 4.3: New Production

Area 4.3.2: Adaptive Production Systems

NMP-2008-3.2-2 Self-learning production systems

Project Idea: Self-Learning Process Monitoring in Machining (SeLProMM)

Prof. Roberto Teti

Dept. of Materials and Production Engineering, University of Naples Federico II



Manufacturing in FP7 Conference

16-17 January 2008, Cardiff University, UK



- **Proposing organisation:** Dept. of Materials and Production Engineering, University of Naples Federico II, Italy
- **Main research interests:**
 - Machine tools, manufacturing processes and simulation
 - 2D and 3D metrology systems
 - Product modelling and reverse engineering
 - Advanced nondestructive evaluation
 - Intelligent sensor development and application
 - Cognitive systems for manufacturing engineering
- **EC project expertise:** Coordination / Participation in more than 30 EC-funded projects to date, e.g.
 - EC FP6 NoE on Innovative Production Machines and Systems (I*PROMS) (Participant)
 - EC FP6 NoE on Multi-Material Micro Manufacture (4M) (Participant)
 - EC FP6 IST STREP on Intelligent Robot Swarm for Attendance, Recognition, Cleaning and Delivery (iWARD) (Participant)
 - EC FP6 Asia IT&C Project on Intelligent Computation in Manufacturing Systems (ICAMS) (Coordinator)
 - EC FP6 Tempus Meda JEP on Development of Academic Curricula in Advanced Manufacturing Engineering (ACME) (Coordinator)
 - EC FP7 Theme 7: Transport, Collaborative Project on Adaptive Control of Manufacturing Processes for a New Generation of Jet Engine Components (ACCENT) (Participant)



Project idea: Self-Learning Process Monitoring in Machining (SeLProMM)

Proposed application field

- Development of sensor network systems for manufacturing process monitoring
- Development of intelligent robots for machine tool service
- System integration between machine tools and process monitoring sensors through intelligent robots

Structuring of the research

- Developing interactive robotic support systems (e.g. through agent-based approaches)
- Developing experimental scenarios and/or resources for experimentation (e.g. realization of robotic systems and sensor network systems)
- Developing a demonstrator for machining applications with low cost sensor monitoring (e.g. wood manufacturing)



Manufacturing in FP7 Conference

16-17 January 2008, Cardiff University, UK



<u>Project budget:</u>	4 MEuro
<u>Project duration:</u>	36 months
<u>Number of partners:</u>	10 partners max

Partners interested in the present initiative

- University of Naples Federico II, Italy (proposer)
- University of Patras, Greece
- Fraunhofer IPA Institute of Manufacturing, Germany
- Schneider Electric GmbH, Germany
- Robosoft, France
- Tekniker, Spain
- SCM, Italy
- JOBS, Italy
- **Additional expertise appreciated:**
 - End users of machining systems

Contact name:

Prof. Roberto TETI

Dept. of Materials and Production Engineering, University of Naples Federico II

Piazzale Tecchio 80, 80125 Naples, Italy

Tel.: +39 0817682371

Fax: +39 08178262

Email: roberto.teti@unina.it

Web site: www.lapt.unina.it