

Mini-factories for customized products using local flexible production

MetNet Seminar, February, 21-22, 2012

Project financing opportunity

EU FP7: NMP topics for FoF PPP in WP 2013 DRAFT of 22/12/2011

Objective: FoF.NMP.2013-6. Mini-factories for customised products using local flexible production

Funding scheme: Small or medium-sized collaborative projects

Estimated deadline of the call: June 2012.

Objective of this FP7 call

Technical content/scope:

Product customisation on functional and aesthetic aspects is a common trend to different market segments (e.g. fashion and interior furnishing, sport and leisure, metal working, bio-medical and safety-related products).

Advanced production equipment and innovative systems are needed to enable *ultra-fast and cost-effective manufacturing of fully customised products on the spot and exactly at the required time.*

Innovative production solutions must be developed to bring **manufacturing operations closer in time and space to the final customer**. In addition, new factory concepts need to be developed like on-site factories or factories-in-a-container, which provide instant manufacturing and customisation services in retail environments.

Objective of this FP7 call

Technical content/scope:

Those mini-factories, addressing adaptation to customer needs at or near the point of sales or use, will be characterised by **fast ramp-up, small footprint and reusability**, and will be easy to handle and to set-up.

Those production systems should also include related *new technologies for supply chain management, product distribution and direct end-user interaction*.

Expected impact:

1. Increased ability to rapidly follow the **market dynamics** by means of *fast production and delivery of personalised final products*.
2. Reduction of the *time to market* by **50%**.
3. *Cost reduction* (around 30%) by decreasing *lead times in product and process development*.
4. *Set-up and ramp-up time reduction* (around 30%) for new processes and plant designs of the mini-factories.

Research activities

... should focus on several of the following areas:

1. **Scale reduction** and **increased flexibility** of production systems in order to satisfy the special requirements of the *local flexible mini-production units*, which have to show a **competitive advantage** compared to the *traditional larger factories* in terms of space, complexity and operator skills.
2. Adaptive control and automation systems for local flexible production with **high customisation capabilities**, where manufacturing operations and sequences need to accommodate to the **highly unpredictable customer demands**.
3. New engineering solutions, including *integrated CAD-CAM*, able to **automatically adapt product features to specific customer demands** and accordingly **configure processes and machines for local production**.

!!! Standardisation, regulation and pre-normative research aspects should be considered.

Results at the end of the project

Proof of concept in terms of **at least one demonstrator** should be delivered before the end of the project, excluding commercially usable prototypes (2006/C323/01), but convincingly demonstrating *scalability towards industrial needs*.

The active participation of **industrial partners, including SMEs**, represents an *added value to the activities* and this **will be reflected in the evaluation**, under the criteria *Implementation and Impact*.

The proposals should cover both research and demonstration activities. **Prototypes and pilot implementations in real industrial settings represent a clear added-value**. Whilst there is no lower or upper limit on the requested EU contribution, the target is that **proposals allocate around 50% of the total eligible costs** of the project (excluding management costs) **to demonstration activities** and this objective will be taken into account in the evaluation under the criteria *S/T Excellence and Impact*.

Project idea 1

Idea: an automated iron-plate processing unit that allows the customer to submit a file (technical drawing) corresponding to his/her needs, via a software platform, and to obtain the final product cut according to the shape / dimensions provided *in near real-time*. Cutting of the iron-plate should be done by robotic cells using laser cutting technologies. The stakeholders in the supply chain are interconnected to the software platform for handling the fast delivery of the order.

Project idea 1

Topic: FoF.NMP.2013-6. Mini-factories for customised products using local flexible production

Key aim:

Advanced production equipment and innovative systems are needed to enable *ultra-fast and cost-effective manufacturing of fully customised products on the spot and exactly at the required time.*

Project idea 3

Main focus:

Mobile factory units with flexible manufacturing capabilities
Intelligent integrator
Customised solutions

Responsible: Stelian Brad

Potential Partners: Sergey Zakharov
Rostock?
Rukki?
Small companies
Others?

Project idea 2

Potential partners:

..... – **project coordinator [proposal]**

RTD performers:

[.....]

Industrial partners:

[...]