PPP: FoF/EeB/EGCI Topic FoF-NMP-2012-4
Title MEGAROB

Objectives:

- The proposed idea is to design a platform that automates high-precision manufacturing operations in mid- and large sized parts or structures.
- The proposed system consists in a conventional spherical robot mounted on a simple structure such as an overhead travelling crane. This structure can cover a huge working area and will allow the robot or set of robots to have a huge workspace. The working area would be discretized (for example an entire industrial premises), which could be carried out through dividing it into three-dimensional cube-shaped sectors.

Expected results:

- The new development will allow very precise manufacturing processes of mid- and large sized parts and structures, with tolerances very similar to the smaller parts standards currently accepted by the industry.

- European companies will be able to have a huge manufacturing machine, with a very low investment, compared to big machines which accuracy is based on their mechanical design.

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Info about project:

The manufacturing of large components and structures is increasingly requiring the development of a system capable of extrapolating the precision of small components to large workpieces.
Almost all manufacturing operations such as machining, welding, riveting, screwing, etc ... are carried out by automated systems, when it comes to processes designed for small and mid-sized parts.

For large components and structures those processes are manual, due to accessibility problems and lack of automated systems that achieve the required tolerances.
It is considered very difficult to develop a sufficiently robust machine tool with control systems precise enough, due mainly to the fact that the larger the machine size the bigger the error, if not in an exponential way, at least in a linear way.

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	Required Partners			
S.No	**Profile**	**Type**	**Country**	**Role in the project**
1	Robots manufacturer	Large	Any	
2	Metrology	SME/RTD	Any	Manufacturer or distribution company of laser tracking measure systems or services company for laser tracking systems
3	Software	SME/RTD	Any	Software development for industrial machines – control systems interfaces and communications.
4	Equipment manufacturer	Large/ SME	Any	Specialist in mechanical, electric and electronic design and manufacturing.
5	Manufacturer of overehead travelling crane or large installations of crane gantries	Large/ SME	Any	
6	End user	Large/ SME	Any	Aeronautics firm of large components, large crafts manufacturer, manufacturer of wind generator blades

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