Fostering Sustainability by Linking it with the Innovation Method TRIZ (Theory of Inventive Problem Solving) – Project Experiences

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***Abstract*: Project experience in linking sustainability, innovation management and the innovation method TRIZ (Theory of Inventive Problem Solving): Training and consulting models**

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In several projects in the last three years the Industrial Liaison Department of the University of Leoben, STENUM Ltd. and JOINTS - Joanneum Research together with Fraunhofer GmbH (Aachen, Germany), Creax (Yper, Belgium) and other partners have developed

1. A training course for sustainable development and the problem solving tool TRIZ (SUPPORT)
2. A consulting concept for the implementation of cleaner production measures through TRIZ-Tools and (PREPARE+)
3. A Tool-Box as a reference book for product development including Sustainable Development (INNOTOOL).

In these projects the main emphasis was the linking of the philosophy of a sustainable development and the theory of a systemic and a creative way of problem solving according to state of the art innovation management theory and using best practice problem solving techniques.

The training course SUPPORT was developed with 4 other European project partners as a Leonardo da Vinci project. SUPPORT consists of the following 7 modules:

1. Introduction module: Innovation & Sustainable Development
2. Cleaner Production Aspects for Products und Processes
3. TRIZ- Tools for Problem Analysis (Function Analysis, Ideal Final Result)
4. TRIZ- Tools for Idea Generation I (Innovative Principals, Contradictions)
5. TRIZ- Tools for Idea Generation II (evolution lines)
6. Evaluation Tools
7. Project Management.

Working materials like background papers, training presentations, videos and exercises for the respective modules are available. In 2004, the training course was tested with several companies in Austria, Estonia and Italy. In the context of a Leonardo Valorization Project, the course was presented in 5 other European countries. It will be launched as a regular course in Italy and Austria early in 2006.

In the Factory of the Future project "SUMMIT/ PREPARE PLUS", the existing cleaner production consulting approach of PREPARE was extended by introducing TRIZ-Tools for problem definition and idea generation (www.prepare.at). This approach now is used regularly by STENUM. The corresponding materials are available on the internet.

In "SME´s INNOTOOL", a toolbox for SMEs was developed, which serves as a reference book for product development (problem definition, idea generation and idea evaluation). Also in this project, predominately TRIZ-tools are used.

Moreover, many aspects and tools of sustainable development, of technology transfer and the generation of an innovation-friendly environment are involved. On the basis of some examples, the results of these projects will be presented (experiences from the trainings, experiences from stimulating solutions and processes in companies and concrete results in companies) and supported by videos. The results show

- that this novel approach broadens the spectrum of concrete measures which were identified
- that this approach can be the basis for structured, focused, effective innovation management providing a structurized conceptual framework and tools to generate a wealth of ideas for improvement
- that this approach identifies not only problems (as material flow analysis, energy analysis, environmental accounting, etc.) but systematically elaborates the ideal final result for products and processes in terms of a sustainable development, characterizes the innovation potential using 35 lines of evolution and identifies steps for improvement.