

Project Partners

To achieve these objectives a critical mass of expertise is required. **TRANSPARENCY** consortium consists of a well balanced group of 12 industrial and scientific partners from 6 European countries, who bring in diverse but complementary competencies in the areas of machine tool design, operation as well as knowledge based manufacturing and software technologies.

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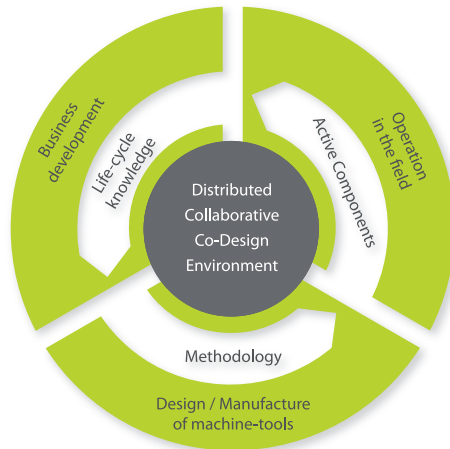


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TRANSPARENCY vision

Enable European machine tool builders to establish a knowledge-based collaboration with end users and component suppliers for machine tool design and operation. Ultimately, **TRANSPARENCY** allows involved actors to gain competitive advantages by permitting collaborative design and exchange of operational knowledge throughout the entire life cycle of the machine tool.



From vision to reality

TRANSPARENCY introduces progressive knowledge engineering methodologies and techniques into the collaboration of partners throughout the different machine tool life cycle phases. **TRANSPARENCY** collaboration environment allows interaction at different stages:

A) Business development phase

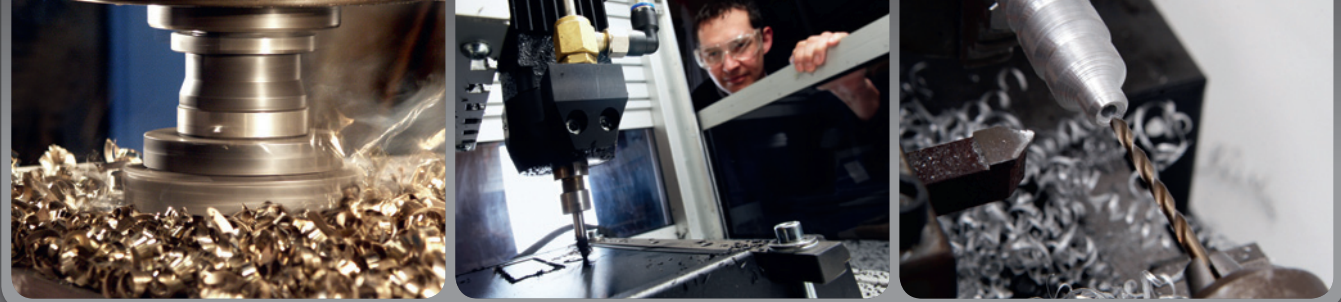
Knowledge about similar machine tools, components and usage scenarios is incorporated into **TRANSPARENCY** concept to define the most beneficial business case.

B) Enhanced machine tool co-design phase

Operational knowledge as well as design knowledge are dynamically assessable to support the design team in making better design decisions.

C) Optimisation of machine tool operation in production environment

For this purpose dedicated design and operational knowledge is provided to the shop floor personnel.



Project Objectives

TRANSPARENCY aims at integrating the machine tool's life line of requirement engineering, design, manufacturing, operation, upgrading and selling/buying into an integrated concept which allows an optimum knowledge management. In that way knowledge generated is easily and promptly accessible to be applied to current and future design and operation activities.

Moreover, **TRANSPARENCY** pursues the following specific objectives:

- 🔧 Improve the collaborative design process for specialised machine tools
- 🔧 Intensify the knowledge exchange between design and operation phase
- 🔧 Enhance life cycle costing and performance predictions for specialised machine tools

Technical Breakthroughs

A core component of **TRANSPARENCY** is the development of a Distributed Collaborative Co-Design Environment, which is based on semantic middle-ware. It provides a coherent and well structured web-based user interface for all different stakeholders and, more importantly, it ties together the main items of the project, namely:

- 🔧 Active Machine Components, holding design and procedural knowledge and capable of collecting operational knowledge
- 🔧 Adaptive Structure for Knowledge Representation in the machine tool industry
- 🔧 Flexible Co-Design Methodology for specialised machine tools, based on life cycle knowledge
- 🔧 Advanced Life Cycle Costing and Performance Prediction tools

Expected Impacts

The project's technical innovations will lead to the following impacts:

- 🔧 Optimal component selection based on feedback of life cycle performance and Overall Equipment Efficiency (OEE) data
- 🔧 Increased OEE of components and machine tools
- 🔧 Active components providing beneficial knowledge on shop floor
- 🔧 More efficient design process with increased transparency
- 🔧 Rate of re-used and recycled components going towards 100%

