

Technologies, Methodologies, and Tools for Re-manufacturing

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Project Aim

The aim of this project is to investigate a bespoke set of technical, planning and management tools to support the growing number of industrial applications in the area of re-manufacturing within sectors such as Automotive, Aeronautical, and within Electronics manufacture. During this project the consortia will consider the translation from 'Design for Manufacture' to 'Design for Remanufacture', and look to develop decisions making tools for remanufacturing. The research will also consider the novel concept of 'product service systems' in which the ownership of the product remains with the manufacturer, allowing for more long-term strategic considerations for design improvement, preventative maintenance and remanufacturing.

Project Structure and Work packages

0. **Review, evaluation and specification of requirements for remanufacturing:** will consider the ethos and practicalities of the activity which is remanufacturing from a technical and economic perspective.
1. **Evaluating the initial phase of manufacturing** focuses on the initial construction and manufacturing phase of every product
2. **Improve design for facilitation of remanufacturing:** 'Design for Remanufacture' including information on product design, methodologies, and data needed for remanufacturing.
3. **Planning and inventory control for remanufacturing:** issues regarding remanufacturing activities and their operational planning will be addressed.
4. **Sustainable business model for remanufacturing:** new and sustainable business models that will consider the various business cases for the entire re-manufacturing process.
5. **Information and Knowledge management for remanufacturing:** the collection and provision of information and knowledge related to product design, disassembly and remanufacturing.
6. **Project and consortium management:** standard project management practices will be used.
7. **Dissemination and exploitation activities:** publication of significant finding in relevant academic and industrial publications, consortia attendance at conferences and industrial trade events.

Industrial Partners

The consortium is seeking: innovative interested industrial collaborators involved in a degree of remanufacturing, to have involvement within this project. Involved companies will benefit significantly from the new knowledge generated during this project and the information sharing during the development of new sustainable business models and design methodologies. The companies involved will also get the chance to have their system modelled as one of the programmed case studies within the 3 years of research to be undertake, gaining high level personalised remanufacturing consultancy. Beside the main topic of re-manufacturing related issues, this will also include advanced methodologies and tools of knowledge management. All those new inventions will be driven by the needs of the European industry.

Such companies should be available to provide 6-18 man-months of effort during this three year project, with more technical and R&D/project capable companies providing the higher levels of support. The involvement of these companies will be in activities such as: providing data of existing processes/design to enable research comparisons; to provide access to production lines/products for observation and evaluation; to be involved in the validation of tool designed within the project, and to test potential production software tools; to attend 6 monthly meeting and be involved in guiding the scope of the research; to have involvement on dissemination activities, attend working group meetings and workshops, and to represent the consortia at activities such as conferences and industrial trade events.

Companies involved will be partially funded by the European Commission during this project, but should be willing to provide labour in-kind in addition to complete the agreed total required project effort.