Contract No.	ETI-CT-2005-023270
Project Acronym	PROSURF
Project Title	Promotion and Support of SME Research and Innovation in the Surface Finishing and Printed Circuit Manufacturing Sectors
Priority	Structuring the European Research Area – Research and Innovation
Project Logo	To be decided

PROSURF is a Co-ordination Action, which is taking place with the financial support of the European Community 6th Framework Programme, as part of area 1.2.6 "Stepping up economic and technological intelligence".

Project Main Goals

The project is focussed on the development and implementation of a research and innovation strategy for Small and Medium Enterprises (SME) and their Groupings in two SME-intensive industry sectors: Surface Finishing and Printed Circuit Board (PCB) manufacturing. The two sectors are closely aligned with respect to the generic technological innovations that are required to meet future challenges, with similar market, environmental, legislative and societal issues to be addressed.

With the objective of increasing involvement in framework programme research, particularly emerging and future European RTD activities and programmes, the central project aims are:

- Analysis and benchmarking of sectoral technological and business/market needs.
- Integration of SME sectoral research needs through exchange and dissemination of information and networking.
- Facilitation of SME innovation in target sectors by establishing best practice

The project will build both the capacity and capability of SMEs to innovate through greater involvement in research. The aims are to strengthen SME competitiveness in both the medium and longer term, through increasing knowledge and awareness of high-tech methods in these traditional industries. A central aim is the development of new sustainable technologies with the capacity to transform these sectors, which requires co-ordination at an EU level to enable relevant research of the highest quality to be delivered.

"Surface finishing" refers to any process that modifies the surface of a material or any process that applies a coating to the surface of a material to confer new properties. Typical processes include the preparation of metal coatings on various substrates by chemical and physical techniques, metal etching, anodising, etc. Most aspects of the technology area are long established and include very large markets such as aerospace, automotive, household and construction.

"Printed circuit board manufacturing" refers to the production of circuit boards for electronic equipment. Metal finishing processes are also in widespread use in the electronics/printed circuit board manufacturing sector.

Key Issues

These SME dominated industries have large numbers of members in Europe, with the majority employing less than 20 people. The vast majority of these companies are also categorised as SMEs in terms of turnover. The biggest group (53%) has an annual sales volume of between 1 and 5 million Euros.

Both industries rely heavily on a multitude of chemical processes, many of which are toxic and capable of causing significant damage to the environment. The implementation of environmental legislation will continue at an enhancing rate, with important implications for manufacturing costs and competitiveness. SMEs have no option but to use solutions containing toxic and corrosive chemicals such as cadmium, chromium VI, cyanide, EDTA etc.

Stronger European legislation is bringing about justifiable reductions in the environmental impact from these industries. The majority of past research initiatives involving these SMEs has been focussed on controlling and reducing the environmental impact of current technologies. Design elements of new production technologies must take into account end of life recycling issues. Environmental Legislation such as the WEEE directive is focussing industry attention on the increasing levels of electronic equipment that are being disposed of and encouraging the recycling of the materials they contain.

The current and future challenges to the competitiveness of these sectors have an impact at a European level. These businesses must introduce innovative new processes and products in order to prosper in the increasingly competitive global market. The threat from other world regions such as the Far East is well known, where labour, social and environmental costs are much lower.

Some important technological advances are being achieved in these industries. Environmental legislative pressures have been a driving force for innovations, such as the development of solder formulations with no toxic lead in the printed circuit board manufacturing and the partial replacement of carcinogenic chromium VI in metal finishing coatings.

A great deal of EU research funded has been invested in these developments in past framework programmes. However, significant technological advances are required to increase the range, complexity and value of products available. High quality technological advances are most likely to be achieved through collaborative research linking SME manufacturing companies with multi-disciplinary research performers and all components of the supply chain.

Technical Approach

By establishing the mechanisms for the introduction of more sophisticated manufacturing technology and added value products through collaborative research, PROSURF will support the EU policy towards promotion of SME activities leading to improved employment prospects and increased skill levels.

The project will be promoted widely to SMEs in the participating and related sectors via a web-based delivery mechanism and other publicity and dissemination routes, using existing databases as a starting point. Dissemination will also be implemented directly to the SME base through participation in presentations and workshops, and through trade publications and exhibitions.

The work plan is structured in three components:

1. *Analysis and benchmarking of sectoral technological and business/market needs.*

Gather and analyse information on the technical state of the art and the technological potential of current scientific research. Analyse business needs and market trends. Disseminate information and formulate a sectoral research strategy and road map for future implementation.

2. *Integration of SME sectoral research needs through exchange and dissemination of information and networking*

Establish a web-based common information system and dissemination platform. Throughout the project dissemination will be integrated with the co-ordination actions. Facilitate co-operation between SMEs and other relevant organisations by establishing networks and groupings.

3. *Facilitation of SME innovation in target sectors by establishing best practice in implementing the research strategy*

Formulate and implement best practice to enable SMEs and their groupings to achieve optimum access to emerging and future European RTD programmes, to achieve greater influence and obtain more benefits. Set up a training programme to support the development of best practice in implementing the research strategy.

The *Project Management* structure will underpin the other workpackages and enable successful delivery of the project objectives.

Expected Achievements/Impact

The co-ordination actions aim to advance the state of the art in this area with well-defined and quantified objectives:

- Detailed assessment of current industrial technologies, their limitations and future aims for technological developments
- Specific economic intelligence analysing market trends, opportunities and societal factors
- Technological intelligence with relevant details of emerging technologies and research
- Road map defining future research strategy and addressing SME needs in the surface finishing and PCB sectors
- Formulation and dissemination of a best practice strategy to improve the level and extent of SME involvement in innovative research

The important impact of these co-ordination actions will take time to be achieved. The initial impact will be the readiness of the sectors to achieve optimum research funding during the forthcoming European Union Framework Programme 7. The number and quality of research results and the impact of research innovations on SME competitiveness will only be realised in the medium to longer term.

List of participants

Participant name	**Country**
C-Tech Innovation Ltd	United Kingdom
Deutsche Gesellschaft für Galvano und Oberfläcentechnik e.V.	Germany
EIPC Services BV	Netherlands
RTC NORTH Ltd	United Kingdom
Syndicat National des Entreprises d'Applications de Revêtements et Traitments de Surfaces	France
International Project Management Plating and Materials	France

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