

*Innovative solutions
for product environmental
compliance and leadership*





The **ECODESIGN INTERACTIVE SYSTEMS**

(ECODIS) project :

Innovative solutions for product environmental compliance and leadership

Environmental concern is moving up the business agenda, thanks to a combination of consumer demand and legislative pressure.

Most large companies now take environmental management seriously and increasingly expect their suppliers to do the same.

But the majority of SMEs do not have access to the necessary knowledge and tools to make their products more environmentally friendly.

So, the Collective Research project Ecodis developed an eco-design platform that enable the industry and especially SMEs to go green, comply with the law and satisfy customer demands.



Green is good: it is good for the planet, good for ecosystems, and good for our health. And it is increasingly good for business, too. A combination of consumer demand and legislative pressure is forcing environmental issues on to the business agenda.

For instance, the **WEEE** and **End of Life Vehicles Directives** set targets for the reuse and recycling of waste in the electric, electronic and automotive sectors. The legislation is forcing manufacturers to consider recyclability in their product designs. Consumers, meanwhile, are increasingly aware of climate change and environmental degradation. Their demands for eco-friendly products are beginning to be heard.

Many large manufacturers are already embracing the environmental challenge, seeing

it as good for business. They are investing time and money into developing environmental policies, management systems and implementing standards such as ISO14001. And now they are beginning to demand that their suppliers also meet a satisfactory level of environmental performance.

But many small and medium-sized enterprises (SMEs) are struggling to comply. They do not have the basic information they need, such as data on hazardous substances, the environmental impact of manufacturing processes and different end-of-life scenarios. Furthermore, most do not have the cultural or technical know-how to incorporate the environmental dimension into their work. Design teams are used for quality, cost and time parameters, but now they must consider the environmental impact of their designs, too.

Eco-design made easy?

The ECODIS Collective Research project is coming to their rescue. It brings together industry associations and groupings (IAGs) from France, Belgium, Hungary and Spain to represent SMEs in plastic conversion, mechanical processing, electrical goods and electronics manufacturing, and automotive parts production. Together with seven research contractors and ten SMEs, they have developed and distribute an innovative ecodesign platform that enables companies to meet the requirements of their customers and legislators. Twelve large companies have also contributed to the project by participating on the Advisory Board.

The Ecodis tool kit, operating either through software installed in a company or accessible over the Internet, integrates four different modules to support eco-design within a firm. It offers an interactive information system called **X-Mat**[®] enabling companies

to manage and monitor the materials and ingredients that are used for product manufacturing and which are potentially harmful or hazardous to health and/or the environment. Anyone is concerned, as the recent REACH regulation introduces legal obligations further along the supply chain to anyone who uses chemicals and makes or supplies products. Almost 30,000 substances are regulated or targeted in Europe by Reach, the vast majority of which remain unknown to most SMEs.

The Ecodis platform also includes the **X-Pro**[®] module for life-cycle and environmental impact analyses. Firms can compare different industrial processes and reduce the environmental impact of the manufacturing phase. A complementary system **X-Rec**[®] assesses different scenarios for end-of-life processing so that products can be designed with reuse and recycling in mind.

“SMEs are now able to develop their own product environmental improvement strategies.”

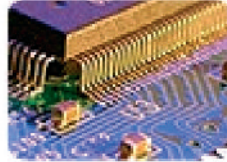
BUSINESS FIELDS COVERED



Automotive



Automotive part



Electronic



Electric



Consumer electronics



Mechanical



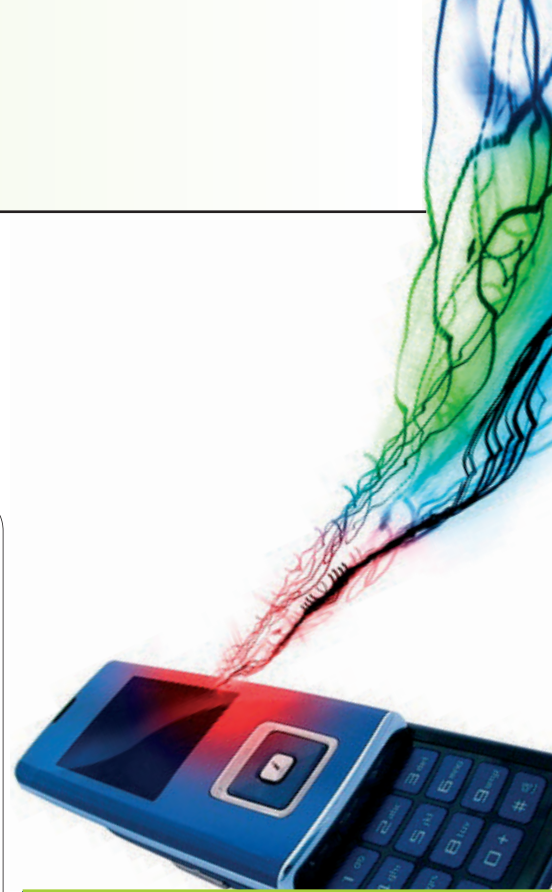
Aeronautic



Materials



Aeronautic equipment



Green light for sustainability

Electronic tools are ineffective if they are not backed up by cultural and organisational changes within a business. The Ecodis project developed also Product Oriented Environmental Management Systems (POEMS) that SMEs can adopt in order to embed eco-design within their organisations. Again, the IAGs are central to encouraging the implementation of POEMS within member companies through the specific training programmes developed and the workshops organised.

More than **250 companies** have been already trained by the ECODIS IAGs' network of experts in France, Spain, Hungary, Belgium and Germany. With access to all these innovative tools and approaches, the SMEs participating in the Ecodis project will certainly lead the green movement in their markets. However, the project has the potential to benefit around 10 000 European industrial SMEs working in the automotive, transportation, plastics converting, mechanical, electrical and electronic goods sectors. Sustainability in these industries is absolutely dependent on the environmental performance of SMEs.

With a very ambitious dissemination plan, Ecodis will help to put green business within their grasp.

Project title	Ecodesign Interactive Systems (ECODIS)
Contract number	CT-2003-500779
Contractors origin	Belgium, France, Germany, Hungary, Spain, UK.
Global project cost	€ 2,917,500
EC contribution	€ 1,666,250

The Ecodis platform is also designed to permit the transfer of data and the traceability of information along the supply chain: **X-change®** will help SMEs to monitor the environmental status of their suppliers and satisfy their own customers that they have followed eco-design principles.

Although no comparable tool exist specifically for Europe's SMEs, the project was not started from scratch. Two of the IAGs involved have been working on such systems for large companies for many years. However, these are complex tools requiring expert knowledge – and they tend to be inappropriate for small businesses. The expanded Ecodis project designed these systems to be adapted for smaller businesses and configured so that they could also be used in other manufacturing sectors across Europe.

“Ecodis allows SMEs to turn legislative pressures into market opportunities.”

Project contractors

Industrial associations

(France, Belgium, Hungary, Spain, Europe)

Fédération française de la Plasturgie,
Project Coordinator



Fédération française des Industries
de l'Electrique, l'Electronique
et de Communication



Fédération française
des Industries Mécaniques



Fédération française des Industries
des Equipements pour Véhicules



European Plastic converters Association



Magyar Vegyipari Szövetseg



Wettenschappelijk en Technisch Centrum
van de Metaal Verwerkende Nijverheid



Asociación española de fabricantes de equipos
y componentes para automoción



Research and technology developers

(France, UK, Germany)

PE Europe
GmbH

Life cycle Analysis



TECPOL

Technical and market
studies for end of life



Technidata
AG

EH&S Software
and ERP Systems



Plasturgie
Services

Product environmental
management systems



CODDE

Product environmental
management systems



ComFR

Software and collaborative
tools development



GETIM

Environmental data on
material and processes



SME core group: 10 industrial european SMEs from France, Hungary, Germany are directly involved to test, validate and ensure that the results fits their expectation



Industrial partners



RENAULT



arcelor
Steel solutions for a better world



AIRBUS



MANN+HUMMEL

PlasticsEurope
Les producteurs de matières plastiques



SAFRAN

legrand®

ALSTOM

MGI COUTIER

faurecia

PolyOne

eurocopter
an EADS company

The Ecodis advisory board gathers

13 industrial companies expecting

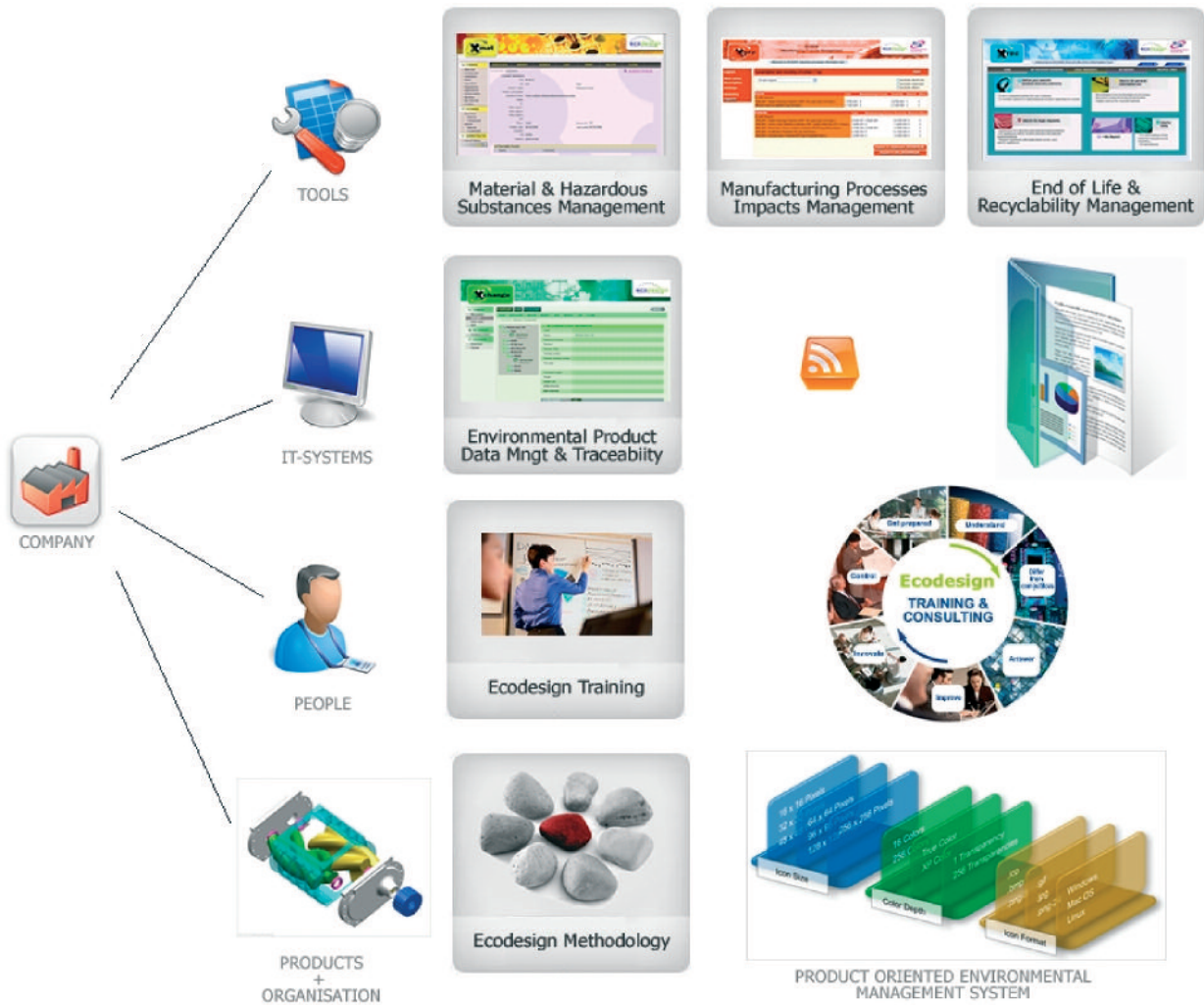
to improve the performance of their

products and the quality of information

exchanged in the supply chain together

in collaboration with their suppliers.

Results overview



The project outcome is an ecodesign platform made of 6 modules (software solutions, methodology and training) to support companies in their product environmental management and ecodesign strategy.



ECODESIGN X-Mat[®]

is a material and hazardous substance management system which helps your company to get compliant with regulations REACH (1907/2006), ROHS (2002/95/EC), 67/548/EC, 1999/45/EC, ELV (2000/53/EC) Directive, as well as to reduce drastically the time and costs spent on the hazardous substances management and reporting process.



Main benefits

- Anticipate and control the strategic risks linked to the presence of hazardous substances in your materials/preparations, products or processes.
- Find reference data about the hazardous composition of various materials (plastics, metals, etc ...) and components:
 - ▶ **Metals**
 - ▶ **Plastics**
 - ▶ **Elastomers**
 - ▶ **Glasses**
 - ▶ **Ceramics**
 - ▶ **Solvents, lubricants**
 - ▶ **Adhesives, glues**
 - ▶ **Surface treatments, coatings**
 - ▶ **Paints**
- Make your inventory and build easily your own material database.
- Minimize the cost of data collection operations from your suppliers by monitoring the workflow.
- Verify the completeness and the compliance of your products with legal, market and customers requirements.
- Provide your management staff and customer with up-to-date reports and appropriate information in widely agreed format.

Features

- ▶ Hazardous substance library with risk, danger and safety labelling (C1, R32 etc...)
- ▶ Powerful navigator : Search by material type, supplier, trade reference, by codification, by hazardous substance, by risk...
- ▶ Market restrictions list: GADSL, GIFAS BT, JIG

Reach ready

- ▶ Compatible with new GHS
- ▶ Annex 14 list of authorized substances and Annex 17
- ▶ Supplier status (producer, distributor, etc..)
- ▶ Quick reports by legal entities

Set-up

- ▶ No local installation
- ▶ Internet access: accessible with usual web browsers (Internet Explorer, Mozilla Firefox, ...)
- ▶ Import/export interface for data down-/upload (XML, xls,...)
- ▶ Customizable with easy parameters set-up
- ▶ Confidentiality protection (Secured data transfer protocol)
- ▶ Data storage and maintenance

With ECODESIGN X-Mat[®] you keep the overview!

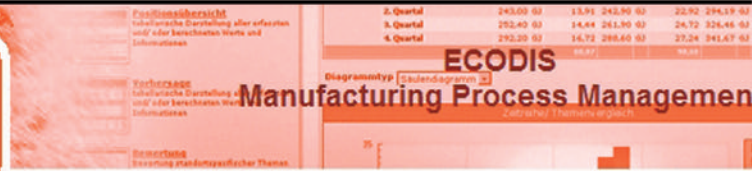
The screenshot displays the X-Mat software interface. At the top, there is a navigation bar with the Xmat logo and the ECODESIGN INTERACTIVE SYSTEMS logo. Below the navigation bar, there are tabs for COMMON, EXCHANGE, and ADMINISTRATOR. The main content area shows details for a substance, specifically formaldehyde. The substance name is 'formaldehyde ...%'. The CAS number is 50-00-0, and the EC number is 200-001-8. The status is 'Valid', and the creation date is 2007-03-13. The comment is 'Annex1 short(B)0,2 % ?? C < 1 %; Xi; R43'. The interface also shows a list of attached files, including 'RISK CLASSIFICATION (14)', 'REGULATIONS (3)', 'EXAMPLES OF APPLICATION (2)', and 'MATERIAL / COMPONENT USING SUBSTANCE (207)'. The interface is clean and professional, with a clear layout for viewing and managing substance data.



ECODESIGN X-Pro[®]

is an industrial process management system which helps your company to evaluate the environmental impacts of various manufacturing steps, from material to product.

It supports your ISO 14001 environmental management activities and your eco-design activities for example by getting prepared to Directive EuP 2005/32/EC.



Main benefits

- Evaluate the carbon footprint of your product or processes in a few clicks.
- Identify the hot-spots in terms of energy consumption and associated CO₂ / Greenhouse gases emissions.
- Model your own processes easily and check the most common impacts (global warming, acidification, ozone layer depletion, eutrophication...) thanks to a reliable LCA (Life-Cycle Assessment) calculation.
- Identify contribution at each step of the product life-cycle.
- Get sample data about the environmental impacts of common industrial processes and materials:
 - ▶ Cold/hot forming
 - ▶ Electronic appliance manufacturing
 - ▶ Plastics processing
 - ▶ Machining
 - ▶ Joining
 - ▶ Heat treatments
 - ▶ Recycling
 - ▶ Complementary processes and logistic

Standards

- ▶ ISO 14040 and ISO 14044 compatible
- ▶ Normalised LCA evaluation method (CML 2001)
- ▶ Multi-criteria assessment

Content included

- ▶ Materials from European Reference Life Cycle Data System[®] (ELCD), v 1.0.1. from Commissions' DG Environment and in scientific support by JRC-IES
- ▶ Various European Energy model available

Set-up & features

- ▶ No local installation
- ▶ Internet access: accessible with usual web browsers (Internet Explorer, Mozilla Firefox, ...)
- ▶ Interface for data download (XML Ecospol) and use in other LCA software (GaBi, SimaPro, Umberto, EIME, Team, ...)
- ▶ Confidentiality protection (Secured data transfer protocol)
- ▶ Data storage and maintenance

Welcome to ECODIS' industrial processes information tool

Injection moulding of a PP part (1 kg, 0.02 kg scrap)

Ecodis Impacts

Inputs

	Total	Manufacturing Process	Electricity	Material	Others
CML2001, Global Warming Potential (GWP 100 years) [kg CO ₂ -Equiv.]	2,947E-003 0		2,947E-003 0		0
Mineral resource depletion [kg Sb-Equiv.]	1,126E-007 0		3,373E-008	7,891E-008	0

Outputs

	Total	Manufacturing Process	Electricity	Material	Others
CML2001, Global Warming Potential (GWP 100 years) [kg CO ₂ -Equiv.]	3,349E+000 0		1,310E+000	2,039E+000	0
CML2001, Ozone Layer Depletion Potential (ODP, steady state) [kg CFC11-Equiv.]	2,169E-007 0		2,169E-007 0		0
CML2001, Photochem. Ozone Creation Potential (POCP) [kg Ethene-Equiv.]	1,092E-003 0		1,522E-004	9,402E-004	0
CML2001, Acidification Potential (AP) [kg SO ₂ -Equiv.]	6,503E-003 0		2,248E-003	6,255E-003	0
CML2001, Eutrophication Potential (EP) [kg Phosphate-Equiv.]	9,846E-004 0		2,256E-004	7,590E-004	0

Export to clipboard (ECOSPOLD)
Export to file (ECOSPOLD)

Category of impact	Equivalent unit per kW	Manufacturing DMI 280	Usage Phase DMI 280	Total life cycle DMI 280
Global warming GWP	kg CO ₂ /kW	9,52	8,050	8,060
Acidification	kmol H ⁺ /kW	0,00	1,54	1,54
Ozone depletor ODP	kg CFC-11/kW	0,0000	0,0005	0,0005
Photochemical oxidant POCP	kg ethylene/kW	0,01	1,79	1,80
Eutrophication	kg O ₂ /kW	0,16	97,85	98,01



ECODESIGN X-Rec[®]

is a decision aid tool which helps your company to define the most appropriate End of life scenario for your product and get compliant with WEEE (2002/96/EC) and ELV (2000/53/EC) directive.



Main benefits

- An up-to-date library of more than 70 dedicated treatment, recycling or recovery processes with technical constraints to be taken into account for product design.
- Check your obligations regarding current recycling regulations.
- Is your product recyclable? How to recycle it? Evaluate your product recyclability according to proven technologies and real options.
- Publish a report on your product end-of-life scenario.
- Get the main European recyclers' contacts, their technical constraints and capacity.
- Get useful online documents on OEMs (Original Equipment Manufacturers) requirements, on recycled materials or on eco-organisms, waste management actors, authorities, ...

Standards

- ▶ WEEE (2002/96/EC)
- ▶ ELV (2000/53/EC)
- ▶ Waste Framework legislation and operation

Content included

- ▶ Processes datasheets with material input/output
- ▶ Technical constraints
- ▶ Process maturity
- ▶ Recyclers adressbook

Set-up & features

- ▶ No local installation
- ▶ Internet access: accessible with usual web browsers (Internet Explorer, Mozilla Firefox, ...)
- ▶ Confidentiality protection (Secured data transfer protocol)
- ▶ Data storage and maintenance





ECODESIGN X-Change[®]

is a product management system designed to ensure the product environmental compliance and impacts' traceability along the supply-chain. It helps companies to get appropriate reports used for internal management or external communication.



Main benefits

- Identify, quantify, localize the material and potentially hazardous substances contained in your products.
- Edit certificate or compliance for RoHs, ELV and other common standards.
- Model easily your products with its sub-parts, processes, material and sum-up its global impact.
- Create standardized Environmental Product Declaration for Marketing communication.
- Provide your customer with BOM/BOS (Bill of Material/Bill of Substances) data in the requested format.

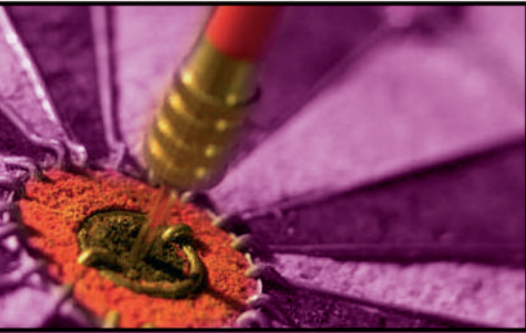
Standards

- ▶ Reach, RoHs, IMDS, ELV, JIG compliance
- ▶ LCA Based Environmental Product Declaration according to ISO 14025/TR

Features

- ▶ Interface with usual CAD, PDM, ERP systems for easy product import
- ▶ Compatible with SAP
- ▶ Direct import of suppliers data
- ▶ XML and Excel data import/export
- ▶ Full traceability (part number, suppliers contact etc..)
- ▶ Consistency Checks





ECODESIGN Roadmap[®]

is a methodology for implementing a ecodesign approach in your company. It contains the key steps from the set up of basics to the full implementation of a Product Oriented Environmental Management System (POEMS).



Key steps

- Evaluate: Environmental impact evaluation of significant company products and potential improvement.
- Analyse: Stakes and opportunities for your particular situation (Market, Customers, competitors, Product range, Trends, Organisation). Potential benefits.
- Plan: Environmental policy, set-up of targets and planning.
- Do: set-up of organization and procedures, implementation and operation.
- Check: evaluation and corrective actions.
- Act: Management review.

Standards

- ▶ Compatible with ISO 14001 Environmental Management System
- ▶ Certification ISO 14001 "Design AND Manufacturing"

Content

- ▶ Relevant background information
- ▶ Self evaluation methods
- ▶ Templates for implementing procedures
- ▶ Illustrated Examples

Use

- ▶ With support of external consultant or self-use
- ▶ Adapted to various business sectors
- ▶ Adapted to SMEs and bigger organisation
- ▶ Basic ecodesign process set-up within few days
- ▶ Full ecodesign implementation over a few months



ECODESIGN Training

The training programme has been developed to accelerate the implementation process of Ecodesign within your company. It gives you the right kick to become or to stay ahead of your competitors.



Organisation

- ▶ Collective sessions with max 25 persons
- ▶ In-house consulting session with max 15 persons
- ▶ Basic duration: 4 days

Main benefits

- Be aware of the stakes and opportunities for your company.
- Give your employees the minimum knowledge to progress efficiently.
- Convert regulations and customers requirements (ELV, RoHS, WEEE, REACH, EUP) into practice and get ready to answer.
- Initiate a pragmatic Ecodesign approach.
- Promote an environmental image of your company.
- Improve the environmental efficiency of your products.

Means

- ▶ ECODESIGN Roadmap®
- ▶ Practical exercise: Dismantling/Analysis of 2 products with identical function for comparison
- ▶ Case study: answering a request for offer with environmental constraints
- ▶ Training slides and documents presented

Who should participate ?

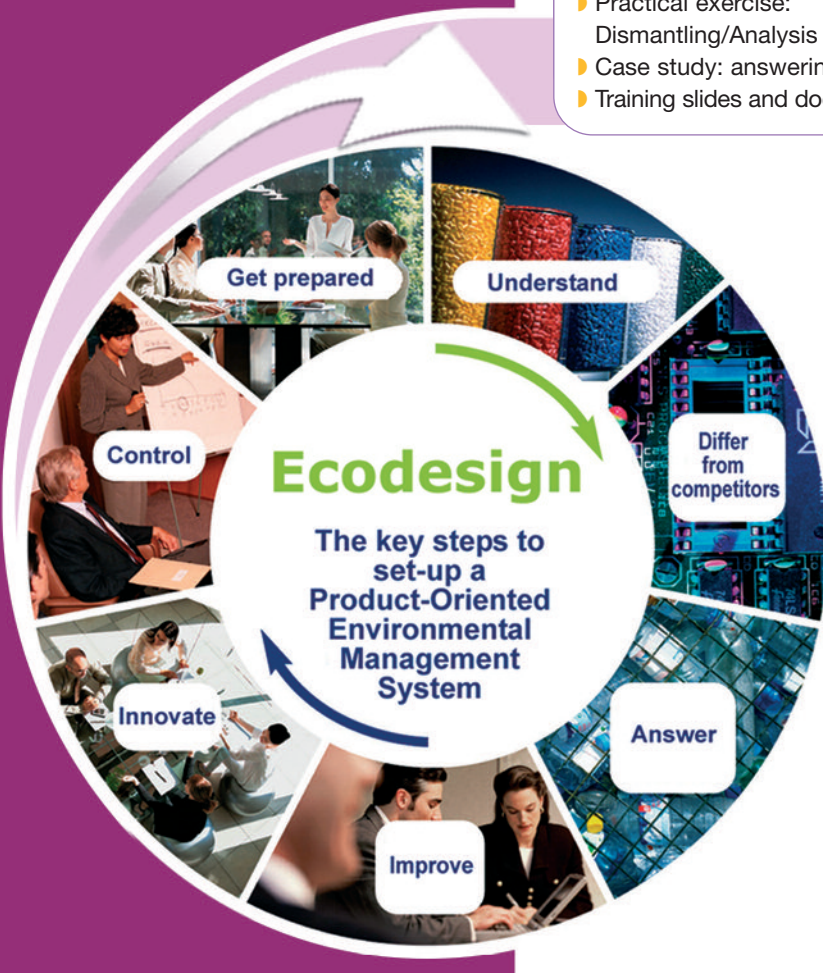
A project team made of various profiles:

- ▶ **Top management**
- ▶ **Quality department**
- ▶ **Health/Safety/Environment department**
- ▶ **Purchasers**
- ▶ **Commercial and Marketing**
- ▶ **Design / engineering department...**

Special topics addressed

Special topics addressed:

- ▶ National and International Regulations,
- ▶ Hazardous substances management
- ▶ Environmental impacts indicators
- ▶ Products' end-of-life treatments/Recycling
- ▶ Ecodesign tools and methodology
- ▶ Environmental Communication & ecolabels
- ▶ Product-Oriented Environmental Management System (POEMS)





Contact for more information

Vincent HAUVILLE
Program manager

ECODESIGN INTERACTIVE SYSTEMS

65, rue de Prony
F-75854 Paris Cedex 17
Tél. : 01 44 01 16 16 - Fax : 01 44 01 16 55
E-mail : info@ecodis.org - www.ecodis.org