

Holistic Integrated Process CONTROL – HIPCON



Process industries in today's highly competitive global market must reconsider their production control policies and strategies if they are to achieve sustainable production and increase their competitiveness. In order to attain sustainable and economically efficient production, it is necessary to take a holistic view of process control and management. This can only be accomplished by integrating product quality, process economy and environmental impact in the next generation process control and optimisation systems.

The HIPCON project aims at developing methodology and technology for holistic process management from a life-cycle perspective. The project results will support long-term transformation of European industry and promote increased competitiveness and eco-efficiency of the industries. The specific aims of HIPCON are to:

- *Develop new parameters for economic and environmental impact of the processes on company and societal level.*
- *Develop process control and modelling methods for industrial production processes covering product quality, economic and environmental impact of the processes.*
- *Integrate performance indicators from different disciplines for holistic process management.*
- *Identify conceptual models and control objectives for the industrial cases. Successful modelling for all industrial cases, linking process status together with economical, environmental and quality performance.*
- *Produce prototype computer code integrating mathematical models from different disciplines and control strategies for development of a holistic process management system*
- *Estimate performance improvements from a holistic viewpoint in all industrial cases.*
- *Disseminate the scientific results through scientific publications and conference presentations.*
- *Disseminate the results to relevant European industrial sectors through industrial take-up activities such as an industrial reference group, company visits and industrial seminars.*

HIPCON runs for three years from January 2004. Within the project, the work is divided in eight work packages (WPs) covering management, economic, environmental and process modelling, process control, system integration and dissemination. The work is co-ordinated by a Management Board and assisted by an Industrial Reference Group. The developed technology will be tested at two case studies: steel manufacturing at SSAB Oxelösund and wastewater treatment at Stockholm Vatten.



Photo: Stig-Göran Nilsson 2002

More information can be obtained from the HIPCON web site www.hipcon.org, from the project management by e-mail hipcon@ivl.se or from the co-ordinator Jonas Röttorp at IVL Swedish Environmental Research Institute by telephone +46-8-598 563 00.

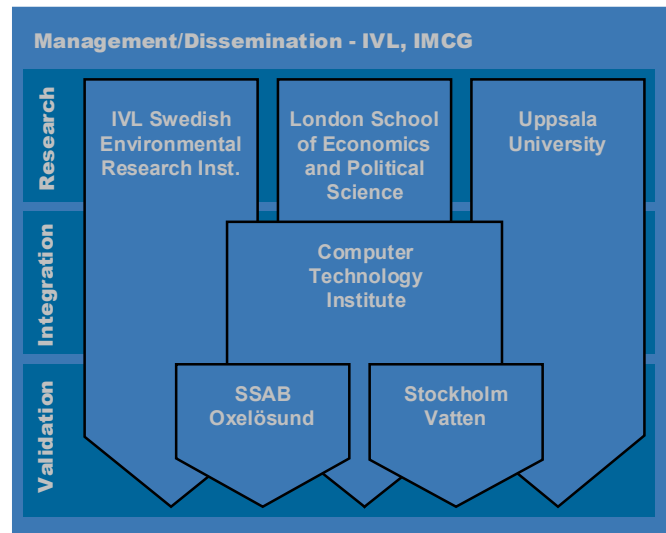


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The HIPCON consortium

The development of the holistic process management system requires close co-operation among experts in a variety of fields, e.g. economic, environmental and process modelling, multi-objective optimisation and model based control theory. Integration of the research is of paramount importance.

The consortium consists of 5 partners with expertise in these areas and two case study industries. Contact details and expertise of the partners are given below and the main roles of the partners in the figure.



IVL Swedish Environmental Research Institute, co-ordinator

IVL is Sweden's leading organisation for environmental research. In HIPCON, IVL works primarily with project management, environmental modelling and process modelling.

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London School of Economics and Political Science

The activities of London School of Economics and Political Science in HIPCON are in the fields of econometrics and statistics.

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Uppsala University, Division of Systems and Control

The division does research in such areas as system identification, signal processing, fault detection and automatic control. UU is responsible for model based control.

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Computer Technology Institute (CTI)

CTI specialises in applied research related to computer science. In HIPCON, CTI works with decision support systems and is responsible for integration and implementation.

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IMCG Ltd

IMCG is an international management consulting company based in London. IMCG works with dissemination and commercialisation of the project results.

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SSAB Oxelösund AB

SSAB is one of the medium-sized steel companies in Western Europe. The steel production facility in Oxelösund is one of the case studies in the project.

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Stockholm Vatten AB

Stockholm Vatten produces drinking water and manages and treats wastewater from Stockholm and neighbouring municipalities. One of the company's wastewater treatment plants is a case study in HIPCON.

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