

Ecomechatronics – the project

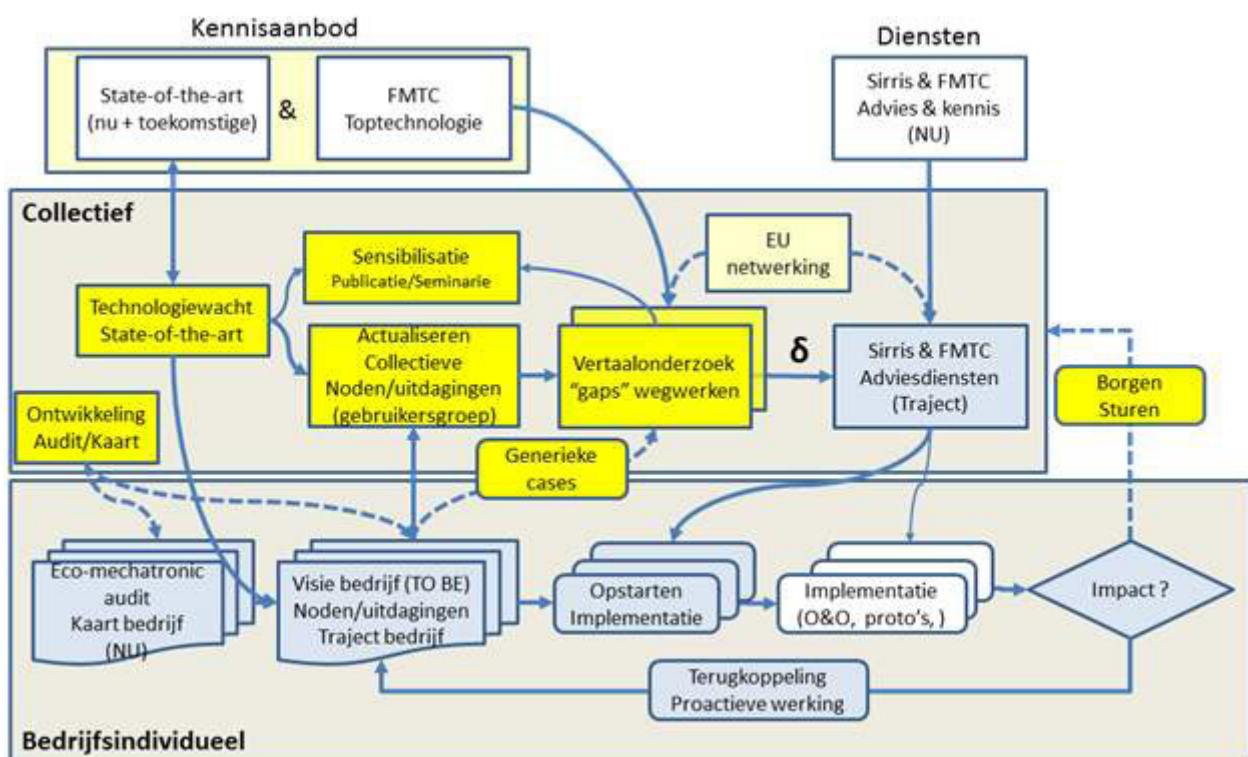
In 2011 Sirris and FMTC started the VIS roadmap Ecomechatronics to support Flemish machine manufacturers with the design and/or redesign of their machines, with an eye for energy efficiency, performance and user comfort.

The global approach of the roadmap is aimed at concrete implementations within target group companies. It contains two important components: a collective roadmap and an individual company roadmap.

The individual company roadmap regards every target group company proactive in the Ecomechatronics roadmap. It addresses the future vision, needs and challenges at its base. Needs and challenges that are important for several companies are included in the collective roadmap. This insight into the company situation also allows for adapting the acquired knowledge and results of the collective translation research, the technology watch or European networking concretely support their innovation roadmap and the realisation of the intended impact. Here, Ecomechatronics wants to actively have the target group companies in its portfolio.

Approach and roadmap course

The ecomechatronics roadmap works step-by-step (in 'work packages') and tests results and findings with a user group of companies that represents the target group:



Overview of the global approach of EcoMechatronics

Collective part (in yellow) : collective actions focussing on strengthening and distributing knowledge, creating networks and steering the actions in function of the collective needs.

Individual company roadmap (in blue) : proactive work based on the portfolio of the target group and the implementation in these companies.

Activities outside the roadmap (white).

Interaction with the user group and target group

The interaction with the companies in the steering group is done in steering meetings as well as with individual company visits in order to coordinate the needs of companies in connection with this roadmap. Companies of the priority target group are also placed in the portfolio to update collective needs. Collective sensitisation and knowledge transfer is done through seminars, workshops, publications, company visits, and this website.

Development of ecomechatronic audit and ecomechatronics chart

Companies are still often unaware of the potential and possibilities of making their machines energy efficient using mechatronics. An ecomechatronics audit will map the energy use of machines using questionnaires and measuring strategies, benchmark them compared to the state-of-the-art (abroad and at Flemish forerunners) and identify the potential for optimisation. The audit will be developed at the roadmap start, inspired among others by the LCA methodology for the systematic analysis and improvement of processes (Unit Process Life Cycle Inventory, dept. mechanics KU Leuven). During the roadmap, the audit will be further refined using the feedback used at companies from the target group and the established state-of-the-art.

Translation research

Translation research must make top knowledge (from e.g. FMTC, KU Leuven PMA or the state-of-the-art) accessible to companies. Obstacles for its application by SME are therefore cleared. The translation research is done using generic cases in collaboration with companies from the user group. A generic case integrates various aspects that are necessary for acquiring knowledge that meets the collective challenges of the entire target group. Testing the results in a concrete case is a test for the relevance and implementability of the result.

The translation research is located in the following fields:

- Component selection and architecture of energy efficient power trains
- Energy-efficient steering with current steering modules
- Energy recovery and energy storage
- Performance adjustments and rapid control prototyping
- Reduction of noise and vibrations

Technology watch and establishing state-of-the-art

Focused technology watch (based on the state-of-the-art, as described in the top research) and contacts with research centre and commercial suppliers will serve as a source for these publications. The distribution channels of these publications will mostly be Techniline and Agoria Online, besides the project wiki (for very focused technology watch). The presentations will take place at Sirris and FMTC seminars, at seminars organised by other members of the VIN network and at fairs.

The technology watch takes place for the three pillars of the ecomechatronics field and a thematic state-of-the-art will be established to summarise an overview of the translation research fields and render it understandable to the user group.

Advice

Together with the translation research and the cases this work package is the core activity of this roadmap and also supports the activities provided in other work packages. The goal is to support target group companies in the renewal of their products so that they can distinguish themselves with innovative, mechatronics concepts in one or more of the three eco-pillars: energy efficiency, performance and user comfort. The focus is not on incremental improvements from the current concepts at the target group companies, but an intended technology advance towards future generation products. This contains ecomechatronics audits and setting up eco-charts, elaborating and assisting with innovation plans, preparing requests for support, and providing advice to the user group.

European networking

Concrete joining in with European framework programmes (FP7, in the future FP8) and other EU innovation initiatives for the most Flemish SME is often a very complex and insurmountable matter.

Based on the knowledge of the needs of the target group and the knowledge of the European programmes, calls and opportunities will be looked at for the integration of the needs of the Flemish SME in the relevant European research programmes.

Identification

IWT VIS roadmap

Duration: 1/1/2011 – 31/12/2014

Project coordinator: Sirris

Sirris research partner: FMTC

Keywords

Ecomechatronics, energy efficiency, performance, user comfort, audit, translation research, machine manufacturer, ecology

EcoMechatronics – Steering group

Les entreprises suivantes sont membres du comité de pilotage du projet EcoMechatronics:

Company	Website
Alliance	www.alliances.eu
Autojet Technologies	www.autojet.com
Baltimore Aircoil	www.baltimoreaircoil.eu
Barco	www.barco.com
Bekaert	www.bekaert.com
Belgian Monitoring Systems	www.visionbms.com
Benes	www.benes.be
Bluways	www.bluways.com
Bosch	www.bosch.be
Dana	www.dana.be
Delta Engineering	www.delta-engineering.be
Duco	www.duco.eu
E ² -Motion	e2motion.my
Geysen	www.geysen.be
Lapauw	www.lapauw.be
LMS International	www.lmsintl.com
Merco Machines	www.merco-machines.com
Optidrive	www.optidrive.be
Punch Powertrain	www.punchpowertrain.com
Vandaele Konstruktie w	www.vandaele.biz
Van Hoecke Automation	www.vha.be