



testimonial



SACMI: innovation first of all

SACMI Imola is the Italian cooperative company, located in Imola (Bologna), leading an international group, worldwide leader in the design, production and marketing of machineries and plants for ceramic industry, plastic industry, beverage & packaging and food processing.



The "Società Anonima Cooperativa Meccanici Imola", acronym SACMI, was founded in 1919 thanks to nine mechanics and smiths able, in a very difficult period for Italy – both economically and politically speaking –, to play an important entrepreneurial role in the mechanical industry context. Even if their activity was deeply influenced by the historical occurrences, during the thirties, SACMI could finally produce its first machine under its own trademark: a cleaning machine for oranges.

After the Second World War, the Group started to produce new machinery for those ceramic companies that had their plants bombed during the war, beginning in this way an activity that still distinguishes it all over the world. At the same time, the Group set up a new machine for the production of metal crown caps. In the following decades, the SACMI trademark began its internationalization: new associated firms, controlled by SACMI Imola were founded from the USA to China, from Far East to South America. In the last years, the SACMI



Group has successfully diversified its production activities, covering also the beverage & packaging, food processing and plastics sectors, reaching the leadership in these fields too. This international leading position has been achieved through the application of innovative technologies, to a strong positioning on the world market and to the ongoing research for high quality standards of products and services offered to their customers.



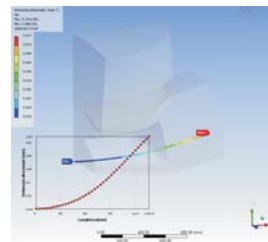
Success and size of the SACMI Group have to be attributed to the member capabilities, their management in view of market developments, recognizing changes and trends, and their courage of taking new opportunities thanks to their aptitude for innovation.

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The use of modeFRONTIER in design

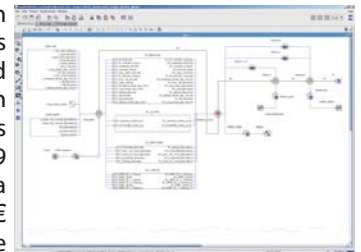
The introduction of new technologies and tools, within complex industrial systems, requires to go through a testing period to evaluate the available solutions on the market. With this specific intent, a pilot project was set up with modeFRONTIER for the automatic design of a press. The technical objective of the project was to obtain a lighter press, respecting the requirement of the deformation coherence between the press bed and the barrage along a control line. The modeFRONTIER workflow, for the project to be carried out, consists of the management of the associated geometric parameters, processed with a spreadsheet, which

generates the absolute geometric parameters, identifying the input quantities with an ANSYS parametric model. It allows to recover geometric files, to regenerate geometries and to process the finite element model, so as to obtain the nodal displacements on the control line and the information regarding the fatigue behaviour. As an output, the ANSYS model generates text files, afterward processed in spreadsheets, to evaluate the comparison with the barrage deformation in the control line and the fatigue behaviour. The quantity target, that is the weight, is read by modeFRONTIER directly in ANSYS, whereas the deformation coherence constraint is read as an output of the spreadsheet variation; a further spreadsheet also evaluates the press fatigue life constraint.



The process went through a first DoE (Design of Experiment) phase, aiming at the evaluation of the influence on the geometric variable output, determined in the CAD, that has allowed to reduce the model, assuming as constants less influential variables. A direct optimization was then performed on the reduced mode, assigning to modeFRONTIER the search for solutions of little importance that comply with the previously established constraints of deformation and fatigue.

The achieved results explain better than thousand words SACMI's choice to extend modeFRONTIER use to design standards: the press configuration changed from 19 to roughly 14 tons, allowing a material saving of nearly 5000€ for each press produced. The achieved design is a completely new one and opens up to new horizons. The design process is moving towards a more thorough evaluation and analysis of the design space, assigning to modeFRONTIER the methodical search for the optimum configuration.



Why EnginSoft and modeFRONTIER in SACMI S.p.A.

"The evaluation of new technologies, which can offer advantages in terms of product development, has always been a central point for SACMI; – stated Mr. Bandini, SACMI Information Systems Manager – for this reason when EnginSoft introduced modeFRONTIER to us, we immediately set up a pilot project able to highlight the benefits coming from the software use." "The test lasted a month, during which we have been validly supported by EnginSoft engineers – added Mr. Bandini – and the results have been very satisfactory. We can affirm that without modeFRONTIER we would have never identified those peculiar engineering solutions, representing the optimum ones for our objectives, allowing us to release a really innovative product, with higher quality, in less time and reducing costs as well!" "After all – concluded Mr. Bandini – modeFRONTIER proved to be a useful technology both to reduce product development time and to identify innovative solutions for our projects!"

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