

CAE's pivotal role in innovation

Interview with Umberto Lecci of Elettronica Group, a world leader in Electronic Warfare solutions



In this interview, Umberto Lecci, head of the Thermo-Mechanical Engineering Design Solution Department of Elettronica Group, a world leader with a complete portfolio of state-of-the-art electronic warfare solutions for modern operational scenarios, discusses the pivotal role that Computer Assisted Engineering plays in innovation which is becoming vital to companies' survival and success in today's fast-paced competitive world markets .



Q: What role does innovation plan (and should it play) in the defence sector?

A: Innovation, in technology and processes, is fundamental for any company that wants to position itself as an industry leader. In fact, it is only by being innovative that companies can survive in a progressively competitive world, where customer demands become increasingly challenging and competition more and more fierce. This is even more true for a company like ELT which has always welcomed and satisfied its customers' requests.

Q: What are the important strategies for innovation and which assessments do you use to drive innovation?

A: It is important to keep abreast of developments with the various tools and with the technological and product processes in your industry. Equally important is to focus both on young staff members, continuously encouraging them to be innovative, as well as on your mature staff members who are the real custodians of company know-how that must be handed down if it is not to be lost.

Q: What role do CAE and virtual prototyping tools play in this regard? How have user needs changed in recent years?

A: These tools are an integral part of development processes and are fundamental to design optimization, in terms of:

- Time
- Costs
- Quality
- Compliance with requirements

As the market daily becomes more dynamic and faster, these tools are evolving to support design. The exponential growth in computing power, and the fact that we work in a market that is steadily shortening timeframes to get to market first, mean that

virtual prototyping is increasingly becoming a necessity in design. When it is linked to a valid and up-to-date database, it allows designers to evaluate the alternatives that then imply design choices.

Q. During your professional experience, what benefits have you gained and how has this changed your approach to design and production?

CAE modeling and its continuous evolution means that, during the design phase, engineers can so confidently project the behaviour of products in advance that they can then focus

on reducing any potential problems arising from the process (identified during the qualification or test phases). Furthermore, making greater use of virtual prototyping together with experimental results, enables engineers to reliably and confidently identify and validate viable design solutions at the beginning of the design cycle, during the design phase.

Q. What prospects do you see for scientific programming applications in relation to the challenges posed by the future?

They will become progressively indispensable, even more so if they could be integrated into CAD modelers and a departmental PDM system capable of managing, maintaining and sharing the various analysis runs and their results.

Q. What projects, objectives and new goals do you intend to pursue thanks to the use of these tools?

We will be creating increasingly accurate numerical designs, together with databases to allow increasingly "robust" and complete virtual prototyping, and the integration of simulation systems with a departmental PDM (Product Data Management) system.

Q. What are your hopes for the world of scientific technology in its constant search for a dimension between creativity and competitiveness?

I hope to see better integration between solvers and software, even from different production companies. I also hope to see the introduction of more robust solvers that are able to guide designers in their choices both during data processing and the post-processing of data.