Newsletter Focus

FOUNDATION OF BEAMIDE, A SPIN-OFF OF INFN TO DEVELOP SIMULATION SOFTWARE



Develop software packages to simulate the effects of radiation on electronic and electromechanical equipment. and to help designers in the implementation of devices: this is the goal of Beamide srl, the new INFN spin-off founded by researchers of the INFN Perugia Division.

Beamide's flagship product is the MRADSIM (Matter RADiation Interactions SIMulator) software, a set of simulation packages developed thanks to the experience acquired by its founders in INFN in the field of coding and the study of the interaction between radiation and technological equipment. The main

characteristics of these applications is to combine high computational performance with a simple graphical interface that allows even non-expert programmers to effectively simulate the effects of radiation on devices, thus expanding the pool of possible users.

The idea behind Beamide's business plan is to implement different versions of MRADSIM tailored to the needs of specific market segments. While the importance of radiation effects for space applications has been known for a long time and is being increasingly and more extensively studied, particularly because of the steady increase in the use of COTS (Commercially available off-The-Shelf) components, it is only recently that the study of effects on earth is becoming relevant because the density and quantity of integrated electronics used on earth in many applications is increasing exponentially.

For this reason, the spin-off aims to release several versions of its software package: MRADSIM-SPACE, addressed to the national and international aerospace community; MRADSIM-EARTH, dedicated to terrestrial applications such as nuclear power plant design, radiation therapy facilities, radioactive waste storage and much more. A Web-based version accessible online, MRADSIM-WEB, based on feedback received from the user community, is also envisaged.

A non-commercial, reduced-functionality version of MRADSIM is already circulating in the research community and has received very favourable feedback, which is very promising for the subsequent development of commercial versions.

The foundation of Beamide represents an example of technology transfer, in which the skills acquired in INFN are transferred to the market, involving experienced researchers along with young scientists in the process.