ACTUARIS, a leader in IT and Actuarial R&D

Stéphanie Dausque, technical director at ACTUARIS International, outlines the key role of IT in Solvency II. She emphasises how ACTUARIS combines IT challenges with actuarial R&D to help insurers meet increasing regulatory requirements

How do you see the role of IT in the successful development of Solvency II?
Even if Solvency II is not primarily about IT, it has however a clear impact on the IT of insurance companies. Let's take the quality of data, where IT plays a central role, and is an overriding topic for me, as well as regulators. ACTUARIS has implemented in Actuaris Tools, our ETL (extract, transform, load) solution, which has a data-quality qualification functionality that attaches to each dataflow a measure of the appropriateness, completeness and accuracy of the underlying data.

Quality of data is also a key issue in pillar 3 of the directive. The main issue of pillar 3 is the gathering of data and a company operating in all lines of insurance could be required to fill in up to 78,000 cells. In the face of such flow of data, the first question for any manager or regulator is: "How may I be sure that the numbers are correct?"

Of course as an actuarial and IT expert, we are trying to help our customers solve such questions by providing software to automate reporting according to pillar 3 specifications, from data extraction to reports sent to regulators.

Last but not least, the modern insurance models have to crunch a huge amount of data and perform increasingly large numbers of simulations. As you know, traditional applications and machines today run in 32 bits, implying a limit of 4 gigabytes (GB) in memory, which is clearly not enough given the needs and demands of company actuaries. Thus, ACTUARIS decided to upgrade its 32 bits modelling application to 64 bits, providing much quicker run times and an increase in the numbers of simulations possible while keeping the compatibility with 32 bits.

Is actuarial research and development (R&D) a priority for ACTUARIS?
It is evident that Solvency II requires a lot of R&D for actuarial consulting firms and it is my belief that only European companies will be able to provide consistent solutions.

ACTUARIS makes it a priority to try and keep at the forefront of actuarial research. The outstanding IT capabilities of ACTUARIS mixed with our actuarial skills allow us to rapidly embed the newest actuarial improvements into our software and this is the only way to give the best answers to clients' technical needs.

As an illustration, we have just finished the implementation of the very promising Reversible Jump Markov Chain Monte Carlo (RJMCMC) method for best estimate calculation in our reserving software, IBNRS. We liaised with ETH Zurich University's Mario Wüthrich, who authored a paper on the RJMCMC method, and then developed it further with our in-house actuaries. We believe we are the only software vendor to offer this method, which is time-intensive and requires a lot of stochastic calculations of variables; however our software runs it in less than one minute.

In addition to actuarial and IT, do you see other departments affected by Solvency II?
Yes definitely. For instance, Solvency II will have an impact on the pricing of products. It is crucial that insurers consider the cost of capital related to the new European regulations when pricing their products. This will be an integral part of our new non-life pricing software we plan to launch in the first quarter of 2013. Our actuarial team is currently working on developing the generalised linear model algorithm for this.

There is also accounting because Solvency II changes accounting practices when it comes to technical closings. In fact creating a Solvency II balance sheet implies a process that, to me, is quite similar to the additional IFRS or US Generally Accepted Accounting Principles (Gaap) closing that international companies implement in addition to their local Gaaps. This is why we developed an automatic multi-Gaap closing solution called Quasar.

What do you offer for Solvency II documentation?
The requirements are significant in the new directive and this is why we created our own system to generate automated documentation directly from our software. The generated documentation is web-based and can be audited by any supervisors and auditors without any prior knowledge of our software.

What drives the quality of your software?
The key factors are: R&D and tests, tests, and again more tests. As well as the integrated unit and regression tests, each release requires several months of testing by our actuarial team of 50 staff.

Moreover, to align our software with our clients' real needs, we hold annual users' clubs in various countries, where we listen to our software users' requests and then agree on the future software roadmap.

Last but not least, we co-operate closely with universities and research centres to define our R&D policy. ACTUARIS has strong ties with the main school of actuaries in France, the University of Lyon's Institute de Science Financière et d'Assurances, as well universities in Holland, Belgium, Madrid and Zurich.