

PROPHET QA

Quality assurance for your Prophet projects

Summary

Prophet QA is a test case management and quality assurance tool designed specifically for use with Prophet Professional models. Prophet QA helps reduce the risk from changes to models or systems by facilitating and managing detailed comparisons between sets of results, giving you better control and audit of the development cycles. The tool is built using the expertise of our own in-house quality assurance experts and is used as part of the nightly model test cycles by FIS' own library and system development teams.

Regression Testing

Regression testing is an important part of managing and maintaining your Prophet environment and models. When any component is upgraded, it is important that the impact is assessed and understood.

Typical changes include:

- Model changes
- Application upgrades
- Compiler changes
- Hardware changes

Regression testing is the comparison of the new results against a previously agreed set of 'base results', and the review of any differences that arise. Actuaries have typically performed their testing once at the end of each project, but regular testing allows any problems to be identified earlier, and their cause narrowed down more precisely.

Automate Test Runs

Prophet QA allows users to run their full regression suite and the analysis of the tests from a couple of mouse clicks. As part of their normal development processes, the actuaries can therefore run hundreds of tests overnight, ready to review in the morning.

Comparisons

Users can then elect to compare results against an agreed 'base set' of results, whether those have come from earlier models or earlier versions of Prophet. Results can be filtered by products, accumulations and runs. This can either be done as part of the automated processing, or subsequently. The comparison report gives a high-level status, which users can drill down into to get further details.

Understanding Differences

The differences in Prophet results can be viewed in a grid, allowing users to get a quick overview of the comparison. Where unexpected differences arise, users then need to identify the root cause.

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Prophet QA includes modified model-analysis tools, allowing users to navigate around their model, switching between the old and new results side by side, and the regression test differences. This allows users to drill-down, through a diagram of the calculation dependencies, from the reporting differences back to the low-level differences in variable definitions or assumptions that cause them.

Comparing Run Logs

In addition to comparing the results of the calculations, Prophet QA can also compare important parts of the run-log, such as the job definition, the data executed and the tables used.

Managing Tests

Multiple test-packs

Model developers typically use different test-packs for different purposes, perhaps a full soak test that runs over the weekend, a lighter smoke-test that runs overnight, and specific unit tests focussed on certain model features. Prophet QA allows you to build each of these and to execute them when needed.

Expected Differences

Prophet QA does not simply compare the generated results against the base set. It includes the ability to exclude some variables and time periods, and to define either relative or absolute tolerances on comparisons.

Tests can also be set up both to record a test failure when differences arise, or a test failure when differences don't arise. In some circumstances a change is expected to make a difference, and it is important that the regression testing can capture the intended outcome.

Audit Trail

Prophet QA keeps a history of all of the tests that have been run. The user can manage this, focusing on key regression tests, perhaps associated with a release or update, and discarding others. This enables an audit trail of the testing performed with each release to be archived and stored, confirming the desired impact (or lack of) of the changes.

Business Benefits

The benefits of better and more extensive testing are quickly realised, with a very high return on investment for efforts made. Key benefits that clients report include:

- Faster and cheaper system and hardware upgrades
- Less time spent bug-fixing model changes
- Future upgrades are built on more robust foundations and cheaper to make
- Easier sign-off and audit of model changes

Assisting Parallel Development

Earlier error detection results in improvements to your actuarial modelling function, with each team member delivering higher quality coding, faster. Combining this with the ability to easily check if their changes break earlier changes from other users, the use of Prophet QA empowers you to:

- Have more people working in parallel on your modelling projects
- To run those projects with less risk
- To work in a more modular fashion, with higher levels of code reuse

All of these result in faster delivery, to a higher quality, of your business-critical projects.

About FIS' Prophet

FIS' Prophet is a leading enterprise-wide actuarial modeling system that helps insurance and financial services companies meet reporting responsibilities, improve risk management, and develop more profitable products faster. Prophet uses customizable actuarial libraries for all major product types, including regional variations. It provides the transparency, performance and control required by today's actuaries and risk managers through integrated financial modeling and data management capabilities. Prophet is used by more than 10,000 users at nearly 1000 customer sites in over 70 countries.