About Talanton

Talanton Technologies was founded in 2022 to offer risk technology solutions to banks and asset managers. Talanton is the leading provider of quantitative software and services for derivatives analytics, limits, and regulatory capital in the Middle East & North Africa.

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Talanton Financial Engineering

Premier Risk Management Solutions

About Talanton

Talanton is a leading Emirati financial engineering firm that combines advanced application engineering with top quant expertise for the capital markets industry.

Our firm implements enterprise risk solutions for front, middle and back office. Talanton leads in custom software development services and model validation consultancy in Middle East & Africa.

What does Talanton mean?

In classical antiquity, the talent (Latin: talentum, from Ancient Greek: τάλαντον, talanton "scale, balance, sum") was the heaviest of common weight units for commercial transactions.

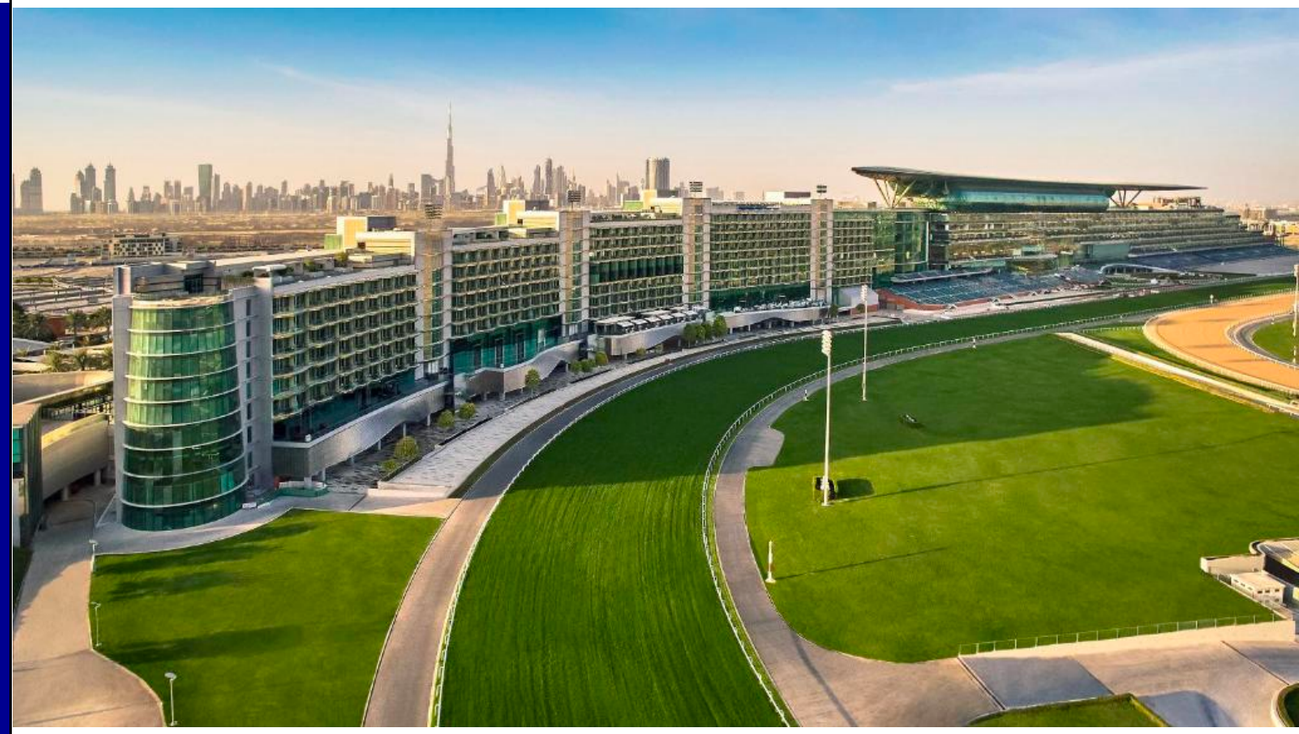
The talent as a unit of value is mentioned in the New Testament in the parable of the talents. The use of the word "talent" to mean "gift or skill" in English and other languages originated from an interpretation of this parable sometime late in the 13th century. Luke includes a different parable involving the mina. According to Epiphanius, the talent is called mina (maneh) among the Hebrews, and was the equivalent in weight to one-hundred denarii. The talent is found in another parable where a servant who is forgiven a debt of ten thousand talents refuses to forgive another servant who owes him only one hundred silver denarii. The talent is also used elsewhere as when describing the material invested in the Ark of the Covenant

Model Validation

Talanton offers independent financial engineering services across a wide range of valuation and risk models, including (but not limited to) regulatory validation reports and insights to mitigate weaknesses and limitations in the models.

We maintain expertise in the cutting edge quantitative research and validation methodologies as well as the implementation practices for the same.

We are located in Dubai, the heart of the Middle Eastern financial activity and are available to work in close contact with clients. We aim for experience in long-term partnerships.



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Why Choose Talanton for your financial engineering solutions?

Today, there is significant emphasis on risk management and model validation. Thus, a coherent model review process is an integral part of model risk frameworks.

Talanton provides on the fly solutions and expert judgement in all aspects of risk management processes. We can validate models and develop software solutions for banks and asset managers across multiple model types with applications to valuation and risk management.

Talanton is completely enabled to develop innovative, rigorous and cost effective solutions to model validation.

Advantages of Model Validation with Talanton

Significant Cost savings

Our approach reduces the costs compared to a traditional vali- dation approach as we reuse standard validation code compo- nents gathered over time in our model validation platform.

Highly qualified expert team

Benefit from access to a wide range of quantitative and technical resources and ensure that top experts work on validating models critical to your business.

Independent Work

We rely on top-notch model validation performed by a team with extensive experience and a solid model validation code framework.

Documentation

The documentation delivered during the validation process is comprehensive and sufficient to independently reproduce the calculation results.

Experience with Open-source

Talanton has experience with the leading quantitative model types published in academic literature, and with the imple- mentation of these models by software vendors, leading to more effective and streamlined validation process.

Attention to assumptions, limitations and output

We don't stop at producing a model validation report and also help you to take a wider view on model risk, its origins and potential impact on your business.

Technology behind the Validation

Our validation approach is based on the global standard for Model Validation process, which integrates into a single environment all the code necessary to specify, automate, run and report model tests for third party and proprietary models. It can be used not only to produce a formal model validation report, but also as a benchmark or challenger model to assess the accuracy of the primary model.

Talanton Model Validation approach is focused on model validation, rather than model development, and provides a wide range of functionality out-of-the-box, saving the validation team the time and expense of creating these components during the project. It supports a variety of model input formats, including those of mainstream vendors and provides a set of common statistical acceptance tests, instrumentation for running regression tests, and a comprehensive set of tools to produce reports on individual test cases and consolidate them into a model validation report template for internal or regulatory use.

A Wide Variety of Models

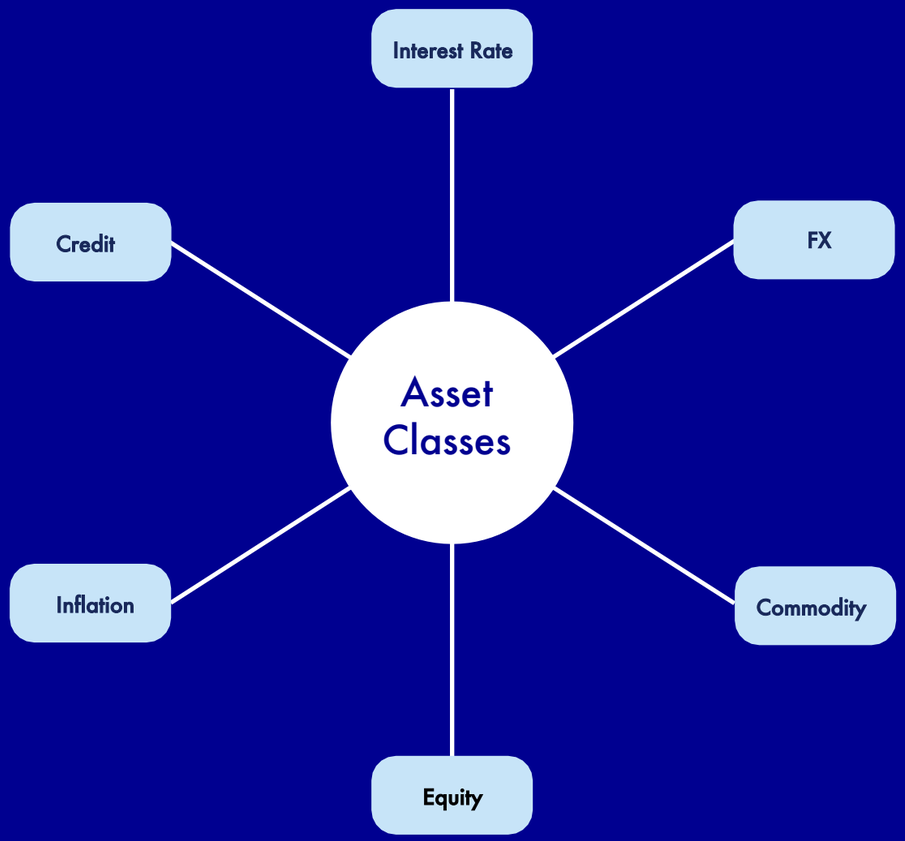
The platform provides a rich spectrum of single-asset and multi-asset hybrid models to assess the impact of model choice on prices and risk measures, providing an additional dimension to model risk assessment.

CompatibL Model Validation Platform provides an open API and can be customized, permitting non-standard models and alternative benchmarks to be used.

Benchmarking across a range of market practice models is encouraged by many supervisory guidelines. It also helps to reduce the risk of implementation error and prevent mis-specification of the model.

Model Coverage

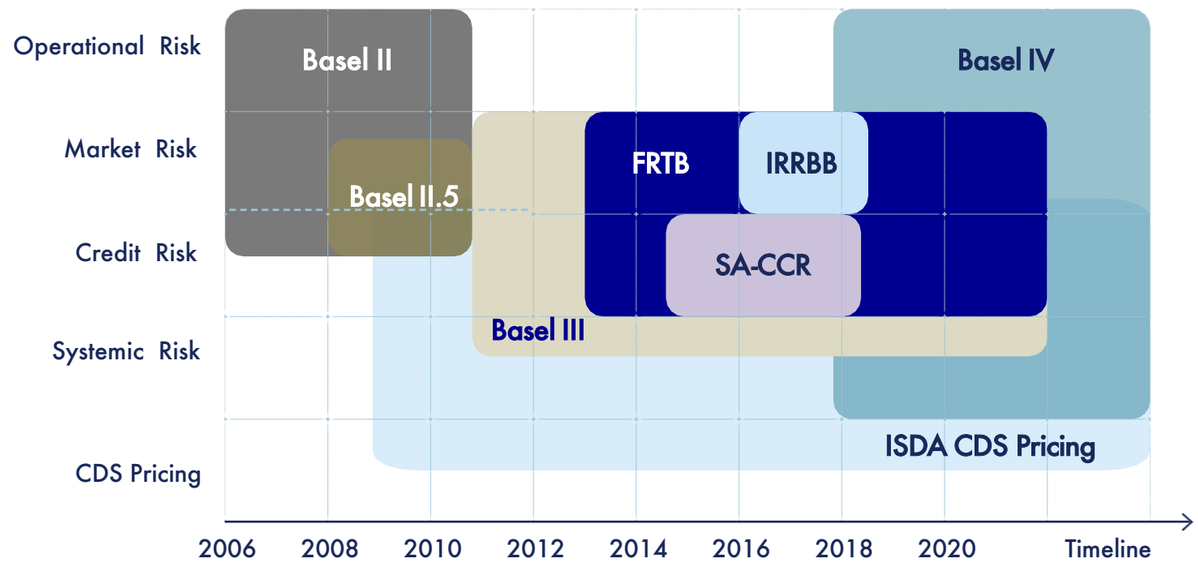
Our competence excels in real-world and risk-neutral multi-factor and multi-asset risk models for asset classes including interest rates, foreign exchange, equity, inflation, credit and commodities.



Models supported by Talanton Financial Engineering team

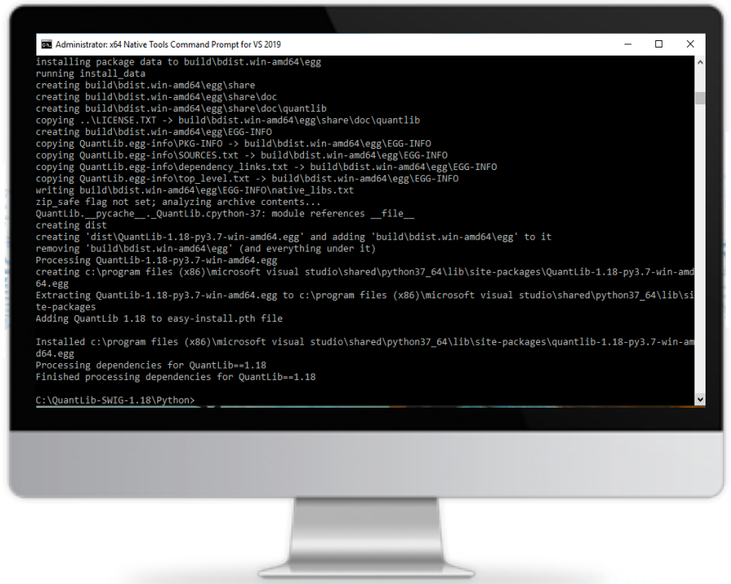
- ✓ Derivative value adjustments
- ✓ Monte Carlo simulation framework yielding evolution of various credit exposure and market risk measures
- ✓ Capital optimization models
- ✓ Regulatory metrics:
  - Basel measures
  - SA-CCR
  - ISDA CDS Pricing
  - FRTB consulting

Global standard coverage



REST API

API of provides the ability to continuously retest the model as improvements are made and remediation action is taken. Following validation project completion, it can be rerun for model updates and new releases without Talanton's assistance. This enables continuous assessment of the model risk on an ongoing basis with low recurring costs.



Compared to the traditional approach of using manual tests on hardcoded inputs and direct integration with market data, our model replication approach enables a wider validation scope, not limited by simple cases and analytical examples. If desired, it can be scaled to a full live portfolio, providing ultimate confidence in the validation results.

Overall, our approach to the automation of model validation tests provides depth and scale advantages over the legacy validation methodologies.

Model Risk Management Steps

Talanton approach to model risk management includes the following stages for a comprehensive and detailed review of the model and its components.

Model specification stage:

- Analyze model documentation, verify its consistency, level of detail and correctness
- Analyze the relevant regulatory guidance and market practice, model choice applicability and adequacy, and propose operationally feasible alternatives
- Identify and assess key model inputs and outputs, verify their completeness and proper use of market data for a given model
- Identify and assess key model assumptions and limitations, then compare to other model alternatives

Validation specification stage:

- Identify and assess key validation assumptions and limitations, given input and output data and possible operational constraints
- Review data scope, validation criteria and functional tests for model vetting based on the results from the previous stage

Testing stage:

- Run validation tests
- Assess the impact of model choice on material measures

Conclusion stage:

- Analyze individual test results, provide recommendations and conclusions
- Gather all findings into an executive summary and a highly detailed full validation report, conforming to the relevant regulatory validation template when applicable

Delivery stage:

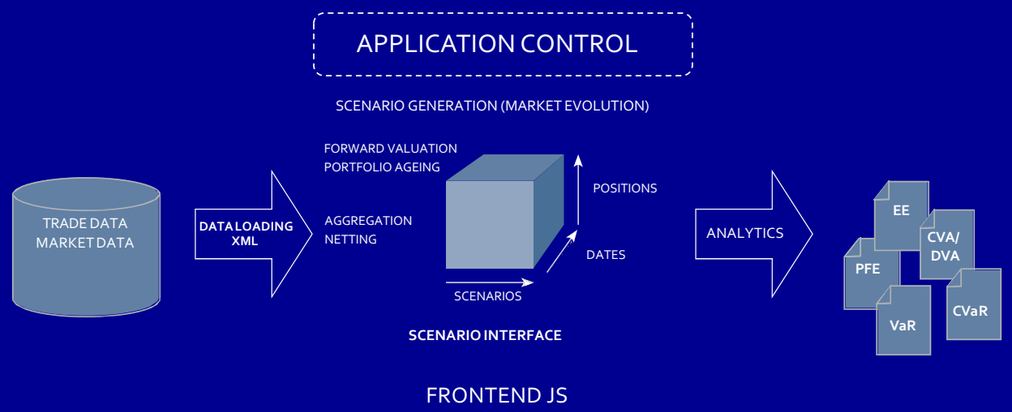
- Deliver validation documentation, reports, and supporting materials
- Deliver test code artifacts and detailed documentation that allows this validation to be rerun in-house after project completion

Test Types

The first category of tests includes tests that verify theoretical expectations and asymptotic conditions. This category is the starting point of any model validation process, covering the most basic form of validation. However, with advanced models such tests are insufficient. Overconfidence in validation results obtained only from this first category of tests can lead to material errors due to operational or functional issues in more complex real-world cases.

The second category includes independent replication of the model and its components from the first principles according to the model specification. Such replication should give identical or statistically close results, provided the same input data is used in both production and challenger environments.

Quantitative Test Approach



The validation process followed by Talanton's team provides base models and statistics functionality for the first category of tests, and many out-of-the-box components for use by a replicating model for the second category of tests.

The components are verified by a comprehensive set of internal tests, which can be run as part of the validation project deliverables to provide assurance of validation code accuracy. We include standard algorithms, such as American Monte Carlo (AMC) and hybrid model calibration, which are applicable across all asset classes and risk factors and enable a wider portfolio scope. Talanton provides lightweight and transparent API that reduces the implementation costs.

We use fully license-free tech ecosystem

Open-source Transparency

Unlike most model validation consultancies, Talanton uses open-source resources for providing Model Validation and other quantitative solutions.

This allows us to offer our services at a competitive price, and at a far lower cost than our international competitors.

Talanton contributes to the open-source community and supports educating institutions in developing nations about regulatory fintech based on open-source. We provide calculations, walkthroughs and spreadsheets in detail for these regulatory calculations:

- ISDA CDS **Pricing (ISDA-CDS)**
- Standardised Approach **(SA-CCR)**
- Derivative Value Adjustments
- Credit & Market Risk Exposures

Talanton is developing several training courses to help quantitative finance specialists (risk quants) to broaden their expertise in the latest regulatory frameworks. We can customize the training program to suit the needs of your organization.

Documentation

Software documentation is essential to quantitative risk management, we include the review of code structure and quality as part of the project.

We ensure that documentation is sufficient for users and decision makers to have complete confidence in how the model operates, including its key inputs, outputs, assumptions and limitations. When improvements are needed, we deliver enhanced documentation with the validation report.

The Process

We verify that the existing model documentation meets the regulatory guidelines.

We provide recommendations in case of any documentation gaps or inconsistencies.

We deliver enhanced documentation with the validation report.

Professional presentation of the report

Professional LaTeX typesetting system used by to provide test result presentation within the report. Documents are automatically generated to produce professional supporting documentation.

In our test-case templates and methodology review, we follow a unified document structure, which covers the following items.

Model review:

- Background, market practice and methodology
- A thorough analysis of model specifications, assumptions and limitations

Validation model review:

- Detailed test descriptions and complete inventory of the required input data
- Detailed instructions on how to perform tests and independently reproduce their results

Analysis and summary:

- Detailed analysis of test results, providing the foundation for report conclusions
- Model risk assessment and conclusions