Volatility is inescapable. We make it clear.

Σ28 | IMPLIED VOLATILITY SOURCE

Empowering clients with implied volatility data & analytics for equity options.

IV Database

SIGMA28 started collecting and processing equity option implied volatility data in 1999 from all European option exchanges and expanded our coverage to other parts of the world in 2008. We now collect, process and filter over 2500 underlying names and this number is ever growing. Our deep understanding of plain vanilla and exotic equity derivatives, from both a trading and risk management perspective, has enabled us to build a historical database of implied volatility that is well structured with high quality, exceptionally clean data.

Data integrity and snapshot method

We use market levels for yield curves, repo rates and implied dividends. Our advanced screening software enables us to carefully check data and identify errors in the volatility surface. This ensures SIGMA28's competitive edge in terms of data integrity.

The implied volatility of each available strike is calculated as soon as the market opens. The frequency of the snapshots taken, up to every 6 minutes, depends on the option liquidity of the specific name.

Coverage

SIGMA28 data covers option markets in EMEA, Americas, Asia and Australasia. All exchange listed Indices, single stocks, ADR's, volatility trackers and ETFs.

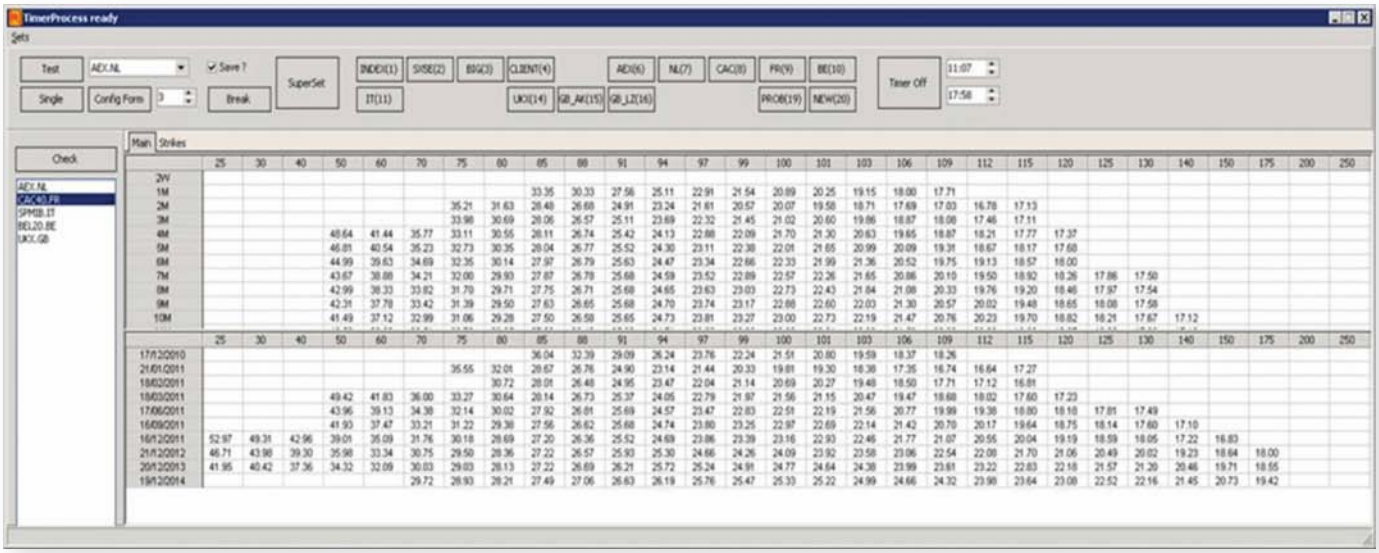
Database structure

The database is set up to cover both actual strike/ actual maturity (e.g. SX5E Dec15 3000 strike) and uniform strike/maturity through interpolation (e.g. SX5E 6M 100% Forwards). The uniform structure is a 30x34 matrix (maturity x % of Forward skew level)

Data enhancement algorithm

Most listed option markets have limited pricing quotes for both skew and maturity. This creates a problem in valuation, structuring and risk management work flows.

SIGMA28 introduced a highly sophisticated and unique data enhancement algorithm. It extends the implied volatility data in blank areas of the surface.
The maturity data enhancement is up to 10 year out.
Skew data enhancement ranges from 25% to 300% of at-the-money Forward levels.



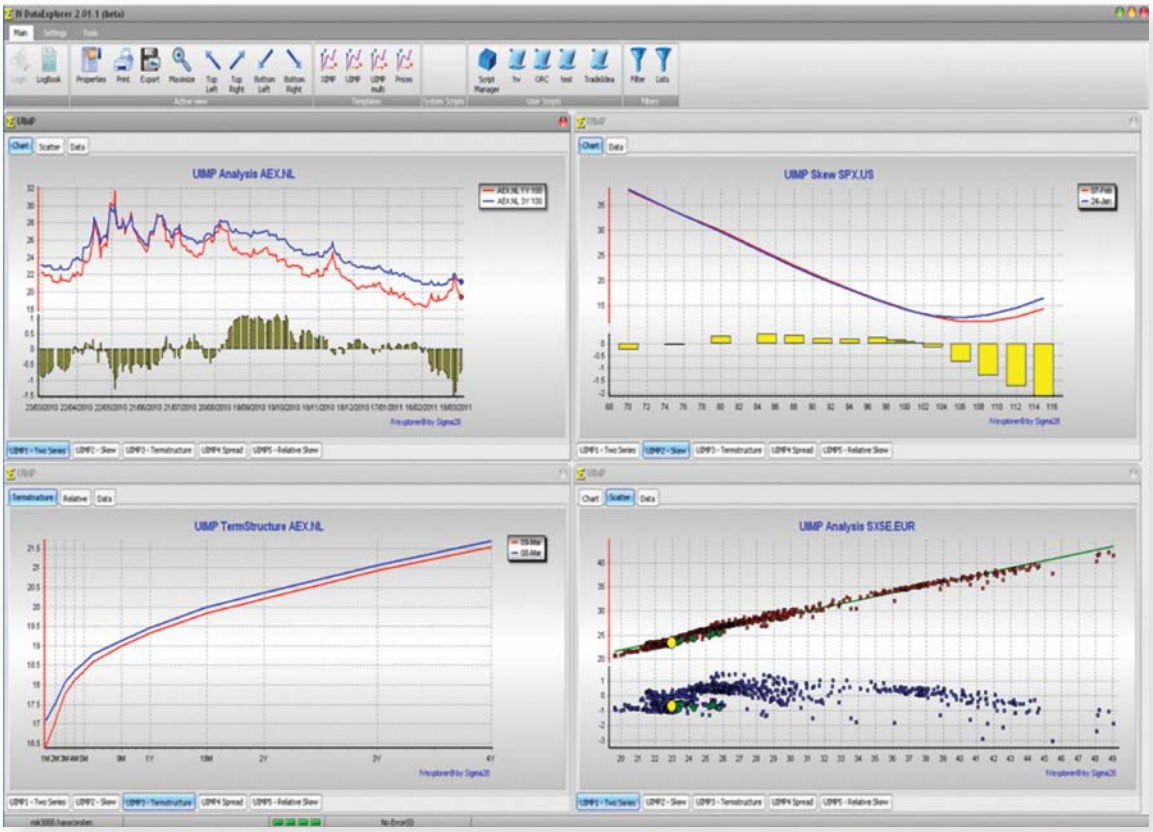
Concept of delivery

There are two ways we can serve our clients: through IVexplorer©, our advanced front-end application or through our API - or both.

IVexplorer©

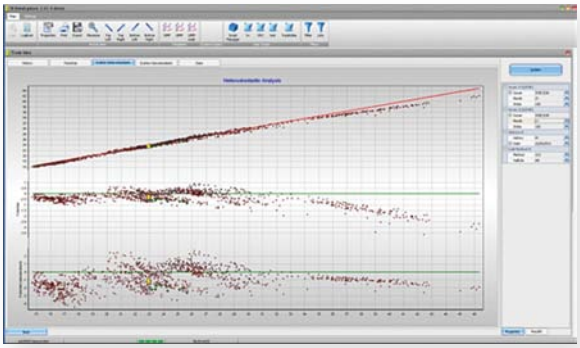
This desktop application allows our clients to analyze the current day's implied volatility data. An intelligent skin around the database has been developed for time series analysis of the volatility surface. Irregularities on the volatility surface can be scanned for both skew and term structure. Our users are able to filter, sort and interpret the data based on various statistical regression methods. SIGMA28 is committed to innovation.

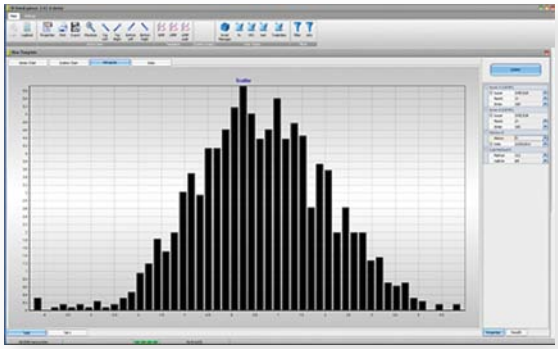
We work closely together with leading universities for academic financial research in the field of Autoregressive Integrated Moving Average (ARIMA) models and empirical calibration of the volatility surface.



Advanced analysis

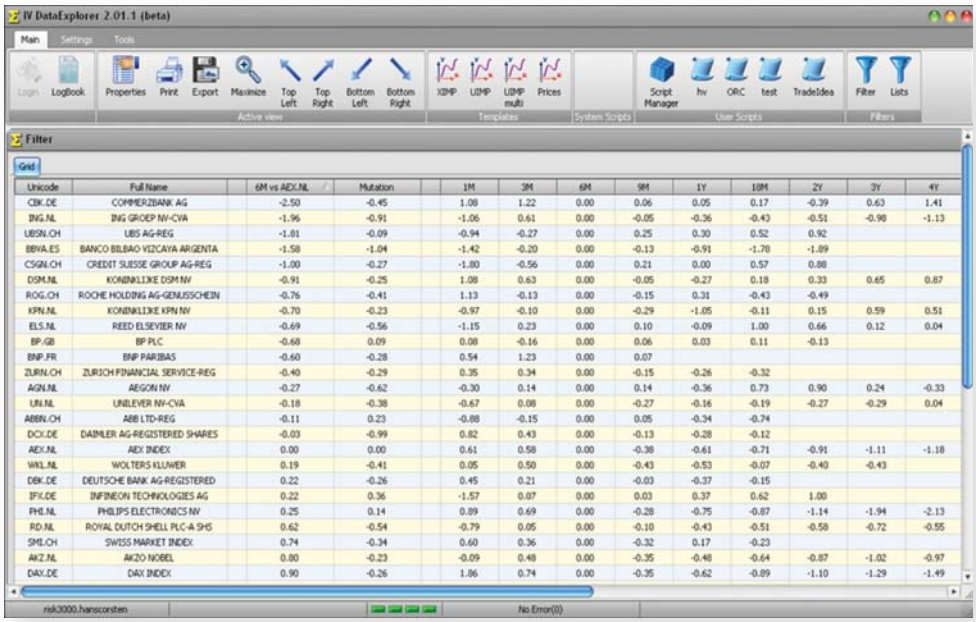
In addition to standard functionality, the application offers extensive scripting that enables our clients to design more complex proprietary analysis and views. Factors like hetero- and homoscedastic behavior and testing for normality can also be brought into the analysis.





Screening the markets for opportunities

Our filter functionality enables clients to run analyses on a user-selected list of names. It functions as a starting point to screen the market and guide users towards underlying names that show potential opportunity and need to be examined in more detail. Users can sort the results to show relatively cheap or expensive implied volatilities. This can be performed on its' own term structure, relative to a reference ticker or relative to realized volatility.



API : Feeding your system with implied volatility data

This service gives our clients access to our Historical Implied Volatility Database through our API's or FTP. The XML format allows easy integration to most third party applications and risk management systems. We support API requests for both Implied Volatility data of actual expiries and strikes, as well as uniform expiries and strikes. Clients download and process our historical Implied Volatilities into their own business platform for back-testing, proprietary coding for trading, risk management and independent valuation.

Who benefits from our services?

Market makers

Knowing your vega per expiry date is important, but knowing if you are comfortable with it is essential. SIGMA28 allows you to analyze the term structure so that you know if you are comfortable with being hit on either the bid or the ask side. This allows you to be more confident to stay in front on the bid or offer side and increasing the hit frequency.

Volatility traders, proprietary traders and flow desks

Historical insight is essential for volatility surface arbitrage or dispersion trading.

Structured product developers

Volatility levels and skews are important for structurers to set accurate pricing. Seeing these factors and their inter-dependence in an historical context enables you to be more competitive and reduce risk.

Hedge fund managers

SIGMA28 allows several strategies to be used for covered call writing, alpha-enhancing volatility overlay, and hv/iv screening.

RISK managers

SIGMA28 provides risk managers with objective 3rd party implied volatility data for equity options portfolio valuations and scenario testing.

The benefits in a nutshell

- Access to today's Implied Volatility in a historic context
- Easy-to-use tools for statistical analysis of Implied Volatilities
- Extensive coverage and a long history of data – covering all market conditions and volatility regions
- Data cleanness is of exceptional quality
- No further internal IT costs or maintenance necessary

About SIGMA28

SIGMA28 is an independent limited liability company based in Amsterdam, the Netherlands.

Our goal is to bring equity option implied volatility information into the open. We believe that it is not the data itself that brings a competitive edge, but the way it can be analyzed and interpreted. Many players in our market still depend on conventional research reports and in-house data efforts. We believe that traders, hedge fund managers, risk managers and market makers alike should have the possibility conducting their own analysis. From an independent source. At any point in time.

SIGMA28 solutions are powered by Morningstar Inc. Morningstar is a leading provider of independent investment research in North America, Europe, Australia and Asia. With operations in 18 countries, Morningstar currently provides data on more than 290,000 investment offerings worldwide.

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