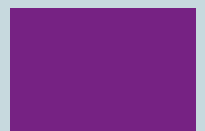
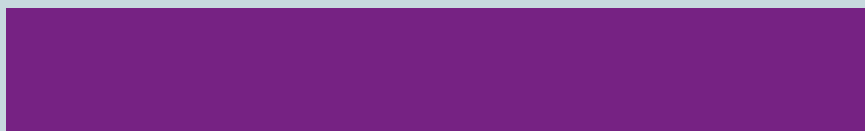


 Igloo Standard Formula
Simplifying the SCR Solvency II calculation



Approximately 60% of the UK market (by premium income, and excluding Lloyd's) use Igloo to support their Solvency II requirements.

9 of the top 11 UK and 8 of the top 10 European non-life insurers are Igloo users.

Implementations of Igloo Standard Formula range from single line domestic insurers through to global businesses.

Igloo Standard Formula has been implemented within a group structure covering over 60 entities across 18 countries.

Igloo Standard Formula means you always stay current, giving you the flexibility to react to changing market and regulatory demands.



Igloo Standard Formula

Simplifying the SCR Solvency II calculation

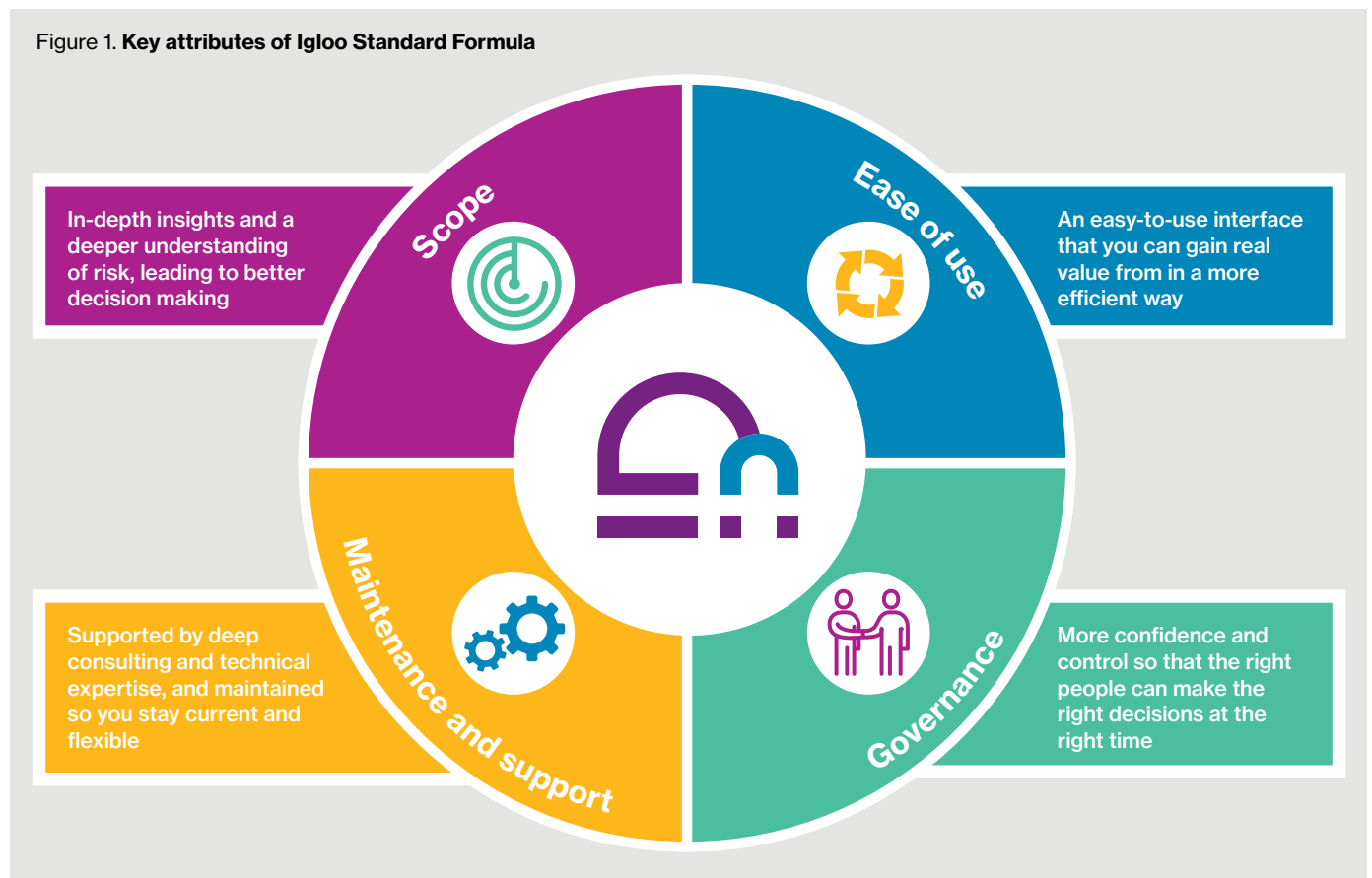
Igloo Standard Formula allows users to quickly see how decisions might impact the risk performance of their business and use model outputs to promote a wider understanding of risk within the business.

Due to its deterministic nature, it would seem at first that the implementation of a standard formula model for Solvency II is relatively unchallenging when compared with the rigours of implementing an internal model; however, this is not always the case. Significant challenges remain, including the need to make timely updates in reaction to any changes to the standard formula and the need for multi-year projections required for the Own Risk and Solvency Assessment. Furthermore, these challenges are in addition to ensuring the calculation of the standard formula is robust, efficient and suitably governed.

Igloo Standard Formula directly addresses these issues and challenges by delivering a powerful modelling tool that enables users to reduce complexity, improve governance and provide them with a much deeper understanding of risk within their organisations. This in turn allows for better decision making and enhanced overall business performance.

Drawing upon deep industry and domain expertise, we provide comprehensive support to all of our clients beginning with the implementation and installation of the software, right through to support with calculations, peer review and user training.

Figure 1. Key attributes of Igloo Standard Formula



Scope

The comprehensive scope of Igloo Standard Formula means it provides in-depth insights and a deep understanding of risk, leading to better decision making. The scope of Igloo Standard Formula includes:

- Complete representation of the Solvency II standard formula
- Modular approach covering all risks and sub-risks as set out in the Solvency II regulations – covering non-life, life and health calculations
- All 'helper tab' calculations and material 'simplifications' codified into the software
- Aggregation of group structures, enabling the user to select any combination of insurance entities for combination
- Ability to calibrate Undertaking Specific Parameters (USPs) within the tool
- Access to all underlying parameters to enable scenario testing to be undertaken
- Ability to undertake projections of future Solvency Capital Requirements (SCRs) and consider alternative scenarios

- Population of relevant SCR and Minimum Capital Requirement (MCR) Quantitative Reporting Templates (QRTs)
- Extensive, detailed reporting at multiple levels of granularity

Figure 2. Life, non-life and health calculations are incorporated



Figure 3. Helper tabs are integrated into the calculation

The screenshot shows a detailed table of 'Single Named Exposures'. The table includes columns for Exposure ID, Exposure Type, Credit Quality, Requirements, Solvency-100% Test, Risk Algorithm Method, Collateral Method, Released Liab, Collateral Requirements, Collateral Market Value, Collateral Mid Risk, Recoverables, BI Premium, Share of Cat Risk, Market Value, Risk Mitigation Effect, and Amount. The table lists 10 exposures with various details such as 'R/SPV Securitized', 'Mortgage/Other Asst', 'Cash at Bank', and 'R/SPV Securitized Other Unrated'.

Single Named Exposure	Exposure per Risk	Exposure Type	Credit Quality	Requirements Met?	Solvency-100% Test Ratio up?	Risk Algorithm Method	Collateral Method	Released Liab	Collateral Requirements	Collateral Market Value	Collateral Mid Risk	Recoverables	BI Premium	Share of Cat Risk	Market Value	Risk Mitigation Effect	Amount
Single named exposure 1	321	R/SPV Securitized				Manual Input Simple		Counterparty as	100%	9,902		5,578					7,689
Single named exposure 2	322	R/SPV Securitized				Non-Life Para Simple		Motor Liab	100%	3,655		59,982	28,458	48,937			7,691
Single named exposure 3	323	R/SPV Securitized				Manual Input Standard		Counterparty as	100%	795	6,479	153,730					7,691
Single named exposure 4	324	R/SPV Securitized				Non-Life Para Standard		Motor Liab	100%	6,238	6,426	880,000	9,993	98,489			7,690
Single named exposure 5	325	R/SPV Securitized				Manual Input Standard		Counterparty as	100%	7,199	3,457	813,660					7,684
Single named exposure 6	326	Derivative				Manual Input Standard		Counterparty as	100%	6,717	1,772				848,615		7,684
Single named exposure 7	327	Mortgage/Other Asst				Manual Input Standard		Counterparty as	100%	1,969	1,086	938,993					243,815
Single named exposure 8	328	R/SPV Securitized Other Unrated			100%	Manual Input Standard		Counterparty as	100%	1,969	1,086	938,993					7,684
Single named exposure 9	329	Cash at Bank	Unrated Bank			Manual Input Standard		Counterparty as	100%	1,307	2,982						842,292
Single named exposure 10	330	R/SPV Securitized Other Unrated				Manual Input Standard		Counterparty as	100%	1,307	2,982						5,949

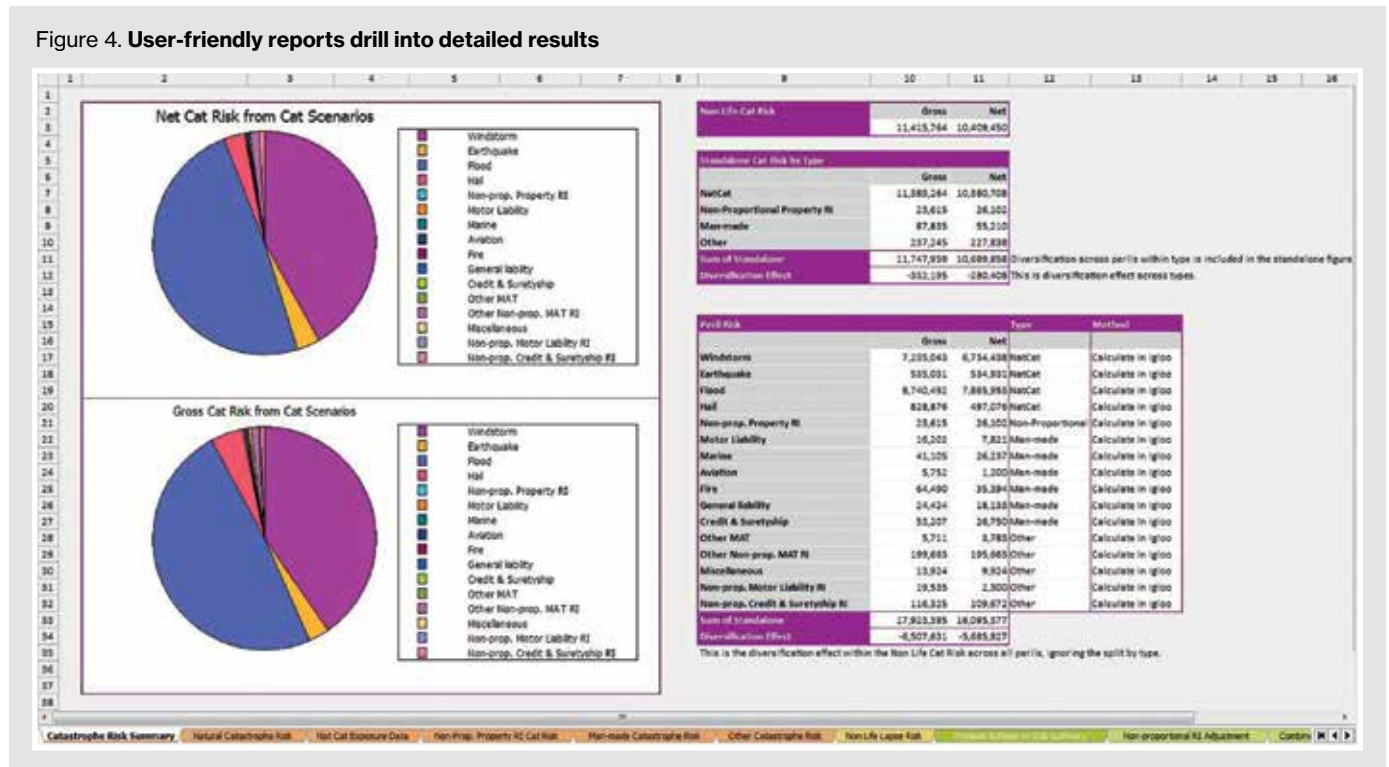
Ease of use

Igloo Standard Formula allows you to derive real value from its use in a smarter, more efficient manner.

- **Reduced complexity** – provides facilities to remove or hide functionality, inputs and outputs that are not required to simplify the calculation process.
- **Drill down** – offers market leading facilities to drill down into the calculation, highlighting important intermediate results and providing significant insights into the drivers of the SCR.

- **Integrated documentation** – reference context-sensitive elements of the technical specification documents for the SCR, MCR and Own Funds calculations easily by hovering over specific inputs or results.
- **Streamlined user interface** – with data input, calculation and reporting all combined into the powerful Igloo platform it allows quick what-if and sensitivity analysis without an onerous governance burden or the need to switch between applications.

Figure 4. User-friendly reports drill into detailed results



Model governance

Better governance means more confidence and control in how your data is being used, and the ability to make sure key information is being seen by the right people at the right time.

Governance of the data submitted to the model and accountability for any changes made are key requirements of the Solvency II framework. Igloo Standard Formula includes the optional Data Control Component (DCC) developed for the wider Igloo suite to provide highly effective control and governance of all inputs and outputs, including sign off and comparison of data and results. It also supports direct connection to corporate data systems, ensuring a clear provenance for all parameters and results.

Figure 5. The web-based interface of the Data Control Component

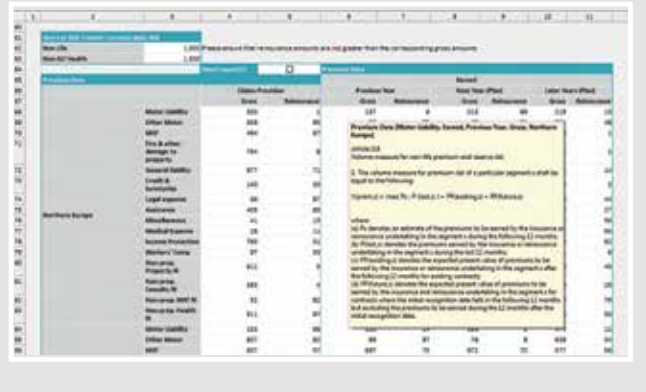


Maintenance and support

Igloo Standard Formula is supported and maintained by deep industry consulting expertise and technical specialists who can ensure you are getting the most out of the product.

- **Igloo Standard Formula helpline** – Our user helpline provides fast and expert advice in the use and deployment of the software.
- **Consulting advice** – Should consulting advice be required around the application or interpretation of the standard formula, we offer market leading expertise and advice that is tailored to your own specific requirements.
- **Managed software updates** – Igloo Standard Formula is fully supported and maintained by us. We will provide timely updates to accommodate any changes made by the European Commission either to the standard formula parameters or to the calculation logic.
- **Changes in standard parameters** – Users can adjust the underlying model assumptions and parameters. This allows the business to test the impact upon the standard formula SCR of changes proposed by EIOPA or to undertake stress tests.
- **Seamless upgrade path** – The standard formula calculations can easily be integrated with other Igloo models.

Figure 6. Context-sensitive technical documentation



Part of the Igloo family

Igloo Standard Formula benefits from being part of a wider family of capital modelling products that fall under the Igloo umbrella and undergoes the same quality assurance process as all other Igloo products. Igloo can be used as the platform for a stand-alone internal model, a useful sense check for more sophisticated models or for a partial internal model.

Using a building-block approach that leverages the other modules, Igloo Standard Formula users are given the flexibility to draw upon more sophisticated elements found within the wider family and realise the benefits of using a partial internal model within a Solvency II framework.

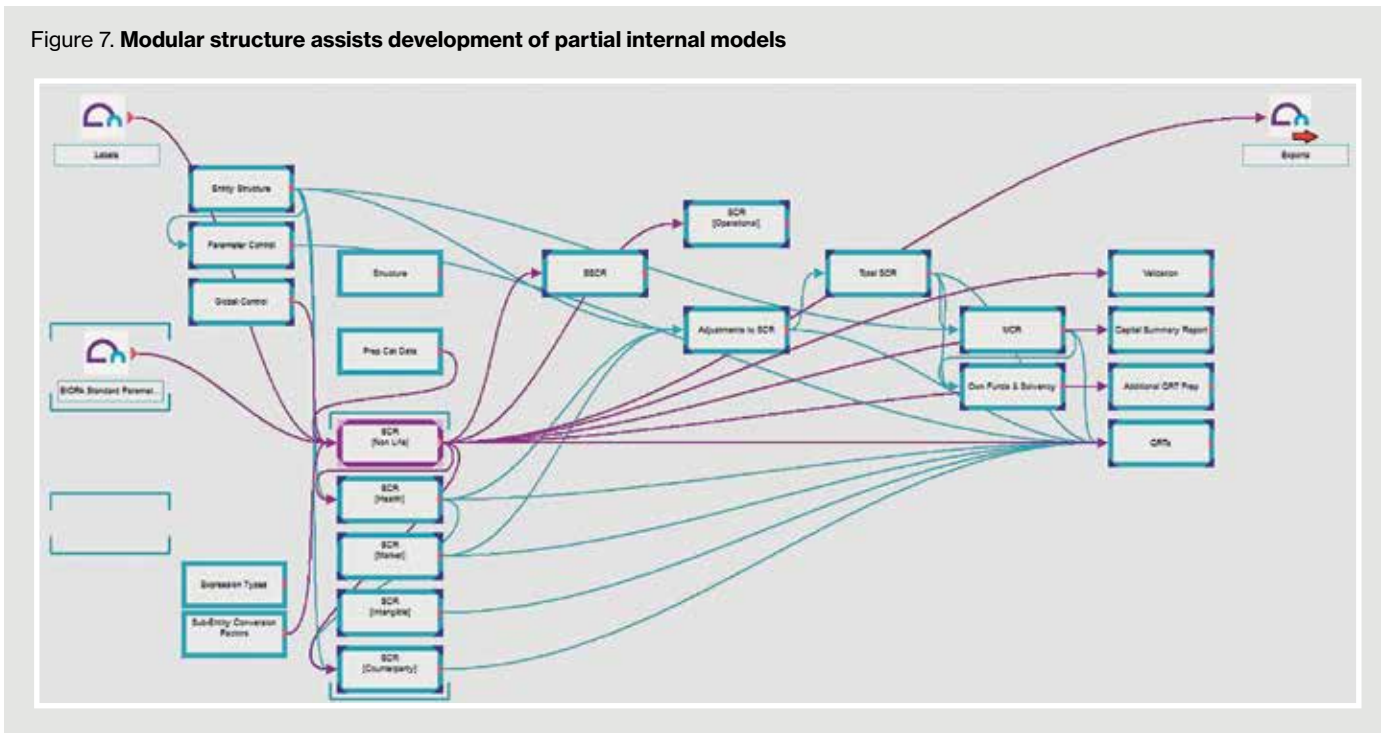
Components of Igloo Standard Formula

Igloo modelling platform: Igloo Standard Formula is compatible with any Igloo edition from Express to Extreme.

The Igloo Standard Formula library: actual calculation kernel, including all reports and both solo and group models.

Data control component: optional additional governance feature to control model and data versioning, role-based permissions, and more.

Figure 7. **Modular structure assists development of partial internal models**



Why Willis Towers Watson?

Our unique combination of actuarial, consulting and software experience provides us with a holistic perspective on your modelling operations and IT infrastructure ensuring our offering is framed within wider organisational objectives.

This is what sets us apart from the competition:

Continuous product innovation

We have been at the forefront of actuarial software longer than anybody else, but we continue to innovate and push the boundaries for what our software products can accomplish. We are the world's largest provider of actuarial software with over 40 years' experience in developing market leading products. Our point solutions underlie everything we do and embody the expertise we possess as a leader in risk and financial management.

Actuarial consulting insight

Our actuarial expertise sets us apart. We combine subject matter expertise with a rigorous development process. Our products are all developed in-house, from concept to creation with our actuarial consulting work informing their development. Our actuaries use our products in their work with insurance clients, and the concepts for new software are derived from their need. Therefore, as soon as a particular market issue appears, we are likely to be already developing or improving a software product to solve your problem.

Technical technology support

Not only do our technical experts have experience in implementing and administering Igloo Standard Formula, they also have intricate knowledge of the insurance software applications themselves. They fully understand your modelling needs and are well placed to make sense of the data and the results generated. Our experts provide ongoing support and offer a one-stop shop for any and every software-related question. Our unrivalled service includes 24x7 monitoring and support contact as well as built-in disaster recovery capabilities, bringing peace of mind for your critical business needs.

Further information

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About Willis Towers Watson

Willis Towers Watson (NASDAQ: WLTW) is a leading global advisory, broking and solutions company that helps clients around the world turn risk into a path for growth. With roots dating to 1828, Willis Towers Watson has over 40,000 employees serving more than 140 countries. We design and deliver solutions that manage risk, optimise benefits, cultivate talent, and expand the power of capital to protect and strengthen institutions and individuals. Our unique perspective allows us to see the critical intersections between talent, assets and ideas – the dynamic formula that drives business performance. Together, we unlock potential. Learn more at willistowerswatson.com.

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