Building a better Solvency II Solution with IBM Insurance Information Warehouse

White Paper

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About This Paper

The purpose of this paper is to illustrate the value of IIW 8.4 release for your Solvency II project, to outline the components of the IBM Insurance Information Warehouse (IIW) and how they assist insurance companies to address the data management and data integration issues relating to the European Union 'Solvency II' Directive.

This paper is divided into the following chapters:

Chapter 1 "**Strategic enterprise risk management and Solvency II**" describes some of the key design and implementation considerations for Solvency II.

Chapter 2 "**Demonstrating the Value of IIW for Solvency II**" outlines the key benefits of IIW for Solvency, how IIW facilitates requirements gathering, solution design and implementation.

Chapter 3 "**IBM Insurance Information Warehouse components**" offers a brief description for each of the IIW components including how IIW can now accelerate Solvency II reporting with sample reports.

Chapter 4 "**IIW components and the Solvency II solution architecture**" describes briefly an overall functional and data architecture for Solvency II solution and how IIW can provide support.

Chapter 5 "**IIW support for Solvency II pillars**"

Who Should Read This Document

Members of insurance organizations considering Solvency II implementation approach including**:**

- Solvency II programme and work-stream managers and project managers
- Members of the steering committees of Solvency II programmes
- Functional business managers and business analysts involved in Solvency II programmes
- IT architects, data analysts and business analysts assigned to Solvency II programmes

Introduction

The deadline for the implementation of the *Solvency II EU directive* of the end of 2012 draws closer. This new directive aims to implement a consistent regulatory risk regime for the insurance industry across EU member states to enhance consumer protection, ensuring trust in and the financial stability of the insurance industry.

From January 2011, the 'European Insurance and Occupational Pensions Authority' (EIOPA) assumed the responsibilities from its predecessor, the 'Committee of European Insurance and Occupational Pensions Supervisors' (CEIOPS). In the lead up to Solvency II, CEIOPS had already issued a large number of consultation papers providing guidelines for Solvency II, including CP58. In June 2010, it published its final technical specification for QIS5. Between now and the end of 2012, when Solvency II is due to come into force, EIOPA will be tasked with ensuring that Member States and the insurance industry are prepared for Solvency II implementation. Some of the key milestones include:

- The final results of the QIS5 impact study are expected to be published by mid 2011
- Level 3 – Supervisory guidelines are expected to be published by the end of 2011
- From the beginning of 2012, the insurance industry will need to focus on embedding Solvency II into 'business as usual' activity. Insurance organizations will need to test the process, models and data over a 12 month period, to ensure certification of the models and process in time for the Solvency II deadline

IBM's *Insurance Information Warehouse* provides the necessary modelling tools and aids to requirements gathering to accelerate Solvency II implementations and to build a flexible fit for purpose risk management warehouse

Although regulations have not yet been finalized, it is clear that the workload involved in ensuring Solvency II compliance means that insurance company can not wait any longer. There has never been a greater urgency on insurance organizations to act and to prepare for Solvency II, especially given the increasing scarcity of actuarial, project and IT resources needed to implement a Solvency II project.

IBM's *Insurance Information Warehouse* (IIW) provides the necessary modelling tools and aids to requirements gathering to accelerate Solvency II implementations and to build a flexible fit for purpose risk management warehouse.

IIW Architecture and Models have evolved over two decades into a flexible, scalable solution enabling the consolidation and integration of data from heterogeneous systems. They can provide a unified view of critical business data for risk management, and support the delivery of accurate, consistent, and timely information for enterprise business reporting and business analytics.

The latest release of IIW contains enhanced coverage for Solvency II including full support for CP58 reporting templates and significantly enhanced coverage for QIS5. In total, 100+ new *Business Solution Templates* have been developed in IIW to facilitate the data gathering requirements for Solvency and the development of Solvency II reporting.

Chapter 1 ***Strategic Enterprise Risk Management and Solvency II***

Insurance organizations may already have the core of the infrastructure needed for Solvency II - a number of disparate data marts, data extracts, a set of risk calculation engines, scenario generators which feed their reserving and actuarial processes and reporting. However, Solvency II enforces a new discipline of a common shared understanding of key business drivers that should feed decisions at all levels, across all lines of business. This implies that insurance organizations must organize their process and data management differently. They will need to have an integrated approach to the management of risk-related data and processes, to data quality and ownership; and to the IT infrastructure required, to ensure they achieve the certification of their models under Solvency II.

Solvency II places the emphasis on data governance and the embedding of a methodology to the management of risk and the application of consistent standards and definitions. This mandates that the data feeding the reserving, actuarial and regulatory reporting processes are:

Solvency II **places the emphasis on data governance and the embedding of a methodology to the management of risk and the application of consistent standards and definitions**

- classified according to a shared, rigorous business terminology
- interrelated according to the relevant underlying business relationships
- properly tagged according to its sources, timing and life-cycle properties
- stored in a uniform manner in an enterprise-class repository, from where it can be easily retrieved, re-purposed, aggregated and disseminated

Evolving an insurance organization's infrastructure and processes to meet the needs of Solvency II within the timeframes set will prove difficult but it is an attainable goal. A best in class and Solvency II compliant Enterprise Risk Management framework can be achieved with the following considerations in focus:

- Adopt a joint business and IT led approach to the collection of data and reporting requirements for Solvency II
- Manage the data and reporting requirements centrally for all business units impacted by Solvency II
- Understand the Solvency II quantitative calculations and identify the data required as input to these calculations
- Understand the data interdependencies between calculations, processes and risk calculation engines
- Adopt an information warehouse design approach which allows for future flexibility given that Solvency II regulations and reporting are not finalized (The possibility of leveraging the Solvency II implementation for future regulatory changes in the area of Assets Liability Management e.g.; IFSR II Phase 4 should also be a consideration.)

- Understand the importance of *Data Governance* and the need for adequate level of documentation for data and reporting requirements during all stages of the Solvency II project
- Consider building a central Solvency II data repository which is a trusted source of data used to support calculation and reporting. This approach brings a number of benefits including:

    - Existing repositories may not be comprehensive enough, have the required consistency and quality, historical information or audit traceability for Solvency II
    - A new repository can support different definitions of measures, segmentation and granularity specific to Solvency II
    - It decouples source extraction from calculation and reporting usage to allow parallel solution development
    - It provides a trusted base of information which can be applied to a grander Solvency II ambition such as Enterprise Risk Management
    - It replaces the complexity and cost of point-to-point integration with the simplicity of a hub-and-spoke pattern

Most importantly, choose a fit for purpose data modelling tool which can support the needs and considerations of your Solvency II project

Chapter 2 ***Demonstrating the Value of IIW for Solvency II***

Insurance Information Warehouse (IIW) provides a comprehensive model of the data structures needed for the insurance industry for an Enterprise Data Warehouse. Alternatively and more often, IIW can be used to build a bespoke data repository designed to solve a particular need. It covers a very broad range of the data storage and reporting requirements for an insurance organization including: sales analysis, product development, claims analysis, finance reporting, risk monitoring and compliance reporting including Solvency II.

The IIW insurance industry data models provide a number of key benefits for a Solvency II project including:

- Facilitating **Solvency II requirements definition**
- Contributing to **better Solvency II design and implementation** of Solvency II Solutions including reporting

Leveraging *IIW's comprehensive glossary of insurance business terms* developed over two decades to extend and agree common data definitions faster across your business can accelerate requirements gathering

Solvency II Requirements Definition

- IIW predefined Solvency II content for data storage and reporting reduces the time, effort and error involved in the information requirements gathering and scoping phase of a solvency II solution
    - The latest 8.4 release provides extensive coverage of Solvency II data and calculations including 100+ Solvency II Business Solution Templates
    - The atomic mappings defined between the QIS5 and CP58, make it easier to identify the data required to support the solvency II measures and calculations
    - IIW provides support for SCR / MCR standard model definitions but is readily customizable for configuration of internal model requirements
- IIW models support the principle of ***one version of the truth*** consolidating your data to one single data source for external compliance reporting, internal risk management and strategic capital allocation
    - Leveraging IIW's comprehensive glossary of insurance business terms developed over two decades to extend and agree common data definitions faster across your business lines
    - Using IIW, promotes the methodology of standardization across lines of business using uniform data classifications and relationships that are compliant with Solvency II segmentation
    - Facilitating the collaboration of business users and technical users by transforming business terms, dimensions and measures required by the business right through the optimized design constructs within the data warehouse within the enterprise model

- From a business perspective, IIW facilitates the transition to more automated risk monitoring and away from management of data in offline spreadsheets using undocumented processes by providing a reference for both insurance industry terms and solvency II content
- IIW provides significant Solvency II reporting coverage including:
    - ***Preconfigured IIW Solvency Sample Cognos Reports*** which could be used as part of a prototype to drive out Solvency II reporting requirements definition (Installation instructions are included of how to recreate sample which also encompasses some sample data)
    - Solvency II CP58 BSTs including atomic mappings (mappings to the data required) for reporting

Solvency II Implementation and Design

- IIW can help address specific design and implementation challenges brought about by Solvency II
    - ***Existing data sources and Infrastructure*** can be leveraged and mapped to a common Solvency II data definition within a new central data repository, leading to potential IT cost and time savings
    - IIW promotes building relationships between disparate functional data areas using associations and aliases
    - IIW includes content and data structures to feed risk calculation engines and to store the calculation results and assumption setting
- IIW Models support the principles of clean, reconcilable and transactional data
- IIW flexible design constructs provide best practice modelling for the insurance domain which promotes:
    - Better management of subsequent customization and any future extensions to a Solvency II data repository in support of Solvency II or any other regulatory compliance requirement e.g., IFRS
    - Improved ability to manage data requirements from a variety of different data sources with different levels of data granularity
- IIW can aid the development of reporting with
    - Focus areas and Business Solution Templates provide pointers and guides to building Solvency II data repositories, external and internal reporting data marts which can be interconnected by way of business definitions and data flow mappings
    - These templates can be further customized and transformed at report development stage. In your modelling tool (e.g. InfoSphere Data Architect), the BSTS are transformed into analytical views and can be further customized. DDL for the required fact entities and dimensions can be generated from these views to accelerate the reports development

Existing data sources and Infrastructure can be leveraged and mapped to a common Solvency II data definition within a new central data repository, leading to potential IT cost and time savings

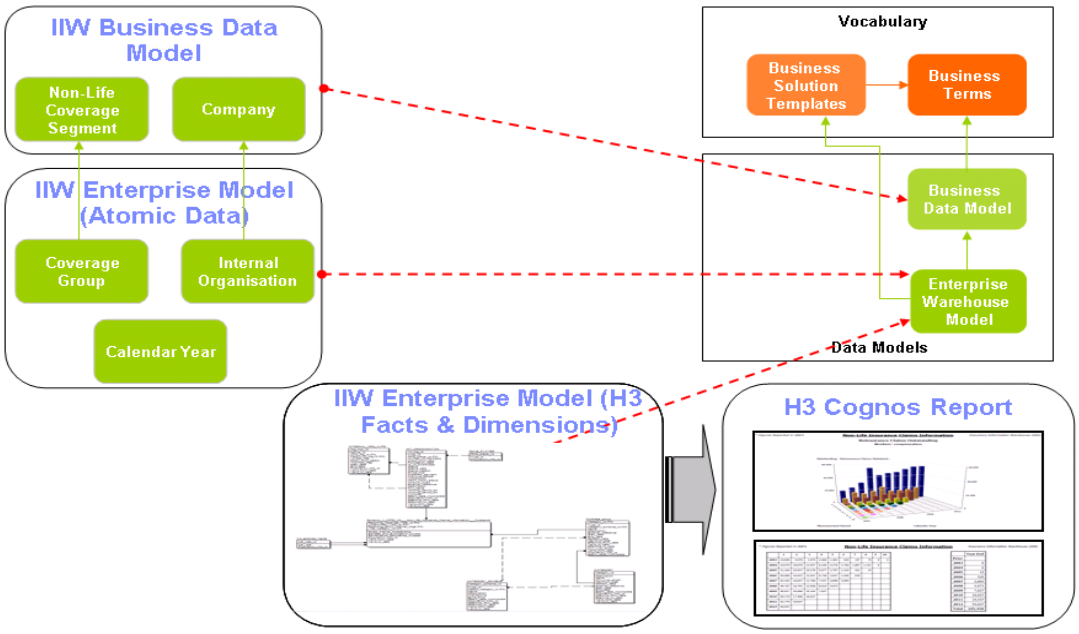
IIW integration with IBM Solvency II Solutions

- **IBM Solvency II Assets**

  IBM has created solution accelerators such as the ***IBM Solvency II Solutions Framework*** which is fully integrated with IIW which can be leveraged, that further reduce the effort of Solvency II solution development. *IBM Solvency II Solutions Framework* includes a comprehensive Solvency II Reference Architecture using an integrated suite of IBM software based on the IIW models. This provides a starting point which can be then customized to the organizations Solvency II needs.

Solvency II BST Example illustrating the value of IIW

IIW now includes extensive coverage for Solvency II with the addition of a large number of Solvency II-related BSTs. Each of these BSTs contains a list of measures and their definition for either QIS5 calculations or CP58 report measures. IIW SII BSTs can provide real assistance to your Solvency II project. To illustrate the value of IIW, the H3 Reinsurance Claims Outstanding CP58 report, available with the latest release has been selected.



This H3 Claims Outstanding BST can be found in the requirements model under the relevant project view or focus areas

- The BST includes a definition of the measure(s) in the report and dimensions (e.g. time, company, business line)
- The measures are mapped to the relevant **business terms**

- These business terms can be then can connected through the business data model to relevant data structures within the IIW enterprise model
- These BSTS are also transformed in the enterprise model into analytical views of facts and dimensions which can be then be customized in your modelling tool and used to generate DDL
- This DDL can be used to create facts and dimensions tables which can form the basis of the report within your reporting development environment (e.g. Cognos)

Chapter 3 ***IBM Insurance Information Warehouse Components***

The IBM Insurance Information Warehouse is a set of models that enables insurance organizations to build and deliver a business-oriented, enterprise-class data warehouse or data repository. The components of IIW are as follows:

- **A Requirements Model** consisting of the following:
  - **Project views** – logical grouping of BSTs, atomic subject areas and business terms designed to solve a particular business problem
  - **Business Solution Templates** *(BSTs)* - a set of 'out of the box' structured requirement templates providing extensive coverage of management information, operational and regulatory reporting designed to meet the needs of a particular business domain or to support the needs of implementation such as Solvency II
  - Glossary of **Business Terms** is an enterprise-wide vocabulary of business concepts that provides an organization's view of itself and its industry
- **A conceptual Business Data Model** - Reference data model (normalized view of insurance business), adopted by over 150 insurers worldwide
- **An Enterprise Warehouse Data model** - this data model defines how multiple sources of data should be consolidated into a single logical structure to enable real-time business analytics
- **New IIW Solvency II Sample Reports* -** this new component was introduced with the latest release and includes a set of pre-configured reports modeled on the CP58 BSTs within IIW

IIW now includes Solvency II Sample Reports – introduced in the latest release

Project Views

The IIW Project Views are business subject area views that span across all IIW models and components with the following functions:

- Aim to provide a clear understanding of the data coverage required for a specific business requirement, such as Solvency II
- Include pointers to Solvency II data, focusing on only those items in the IIW models that contribute to solving the immediate business issue
- Each project view identifies the relevant BSTs, measures, dimensions, atomic subject areas, needed to address the particular reporting requirement
- The scope of each IIW project view can be extended to include the relevant pre-defined mappings that exist between the BSTs and the IIW Enterprise Data Warehouse Model

An IIW Project View identifies the relevant BSTs, measures, dimensions, atomic subject areas, needed to address the particular reporting requirement

Business Solution Templates

The IBM Insurance Information Warehouse contains extensive list of Business Solution Templates (BSTs), reflecting the most common queries and analyses for business performance measurement and reporting. IIW also supports other analytical functions such as ad-hoc reporting, data mining and decision support. The BSTs comprise three main components:

- More than 2,000 reusable business measures
- More than 30 reusable dimensions of analysis
- More than 300 different collections of measures and dimensions into reporting templates that can be easily customized

***BSTs* logically group existing and new measures and dimensions, which together capture and describe an analytical need in a given business area**

These BST measures include the main reporting measures and key performance indicators (KPIs) for an insurance organization. Each measure is fully defined and can be used either in its own right or as a component contributing to one or more other measures. This promotes the consistent reuse and definition of measures across the organization and is a key aid in the business metadata activities of a business intelligence environment within an organization.

BSTs logically group existing and new measures and dimensions, which together capture and describe an analytical need in a given business area. The templates, measures and dimensions can be fully customized or extended. New Business Solution Templates, measures and dimensions can also be created using IIW if required.

Some 30 industry standard dimensions are provided with all members fully defined. The BST dimensions support the following functions:

- Provide the headings under which measures can be broken down, compared and the organization's behavior is monitored and tracked.
- Are reusable across reporting and analysis templates, thereby enforcing conformity of dimensions used in different areas of analysis, ensuring uniformity of reporting

Specifically the regulatory compliance BSTs cover reporting requirements for: IFRS/IAS standards (e.g. IFRS 4, IAS 18, IAS 32, IAS 37, IAS 39, and IAS 40), SOX (such as compliance sections 302, 404, 409, 802, 906 and 1001) and *Solvency II*. The IIW BSTs that support Solvency II reporting and analysis requirements are described in the final chapter and listed in the appendix.

Business Terms glossary

This glossary allows non-technical business experts to describe and define in their own words the concepts they use every day. The glossary is a comprehensive list of insurance, financial services and general business terms, included with IIW and contains:

- definitions written in plain business language
- detailed data elements that together specify what each particular business term means for the insurance organization from the data perspective
- Terms that may be related to one another through relationships such as 'more generic or more specific' or as synonyms or aliases

Business Data Model

The Business Data Model can be characterized as a *business* view because it does not include technical implementation considerations, such as details related to any specific database. It is also not concerned with optimization for reporting and analysis, such as aggregations, derivations or de-normalization.

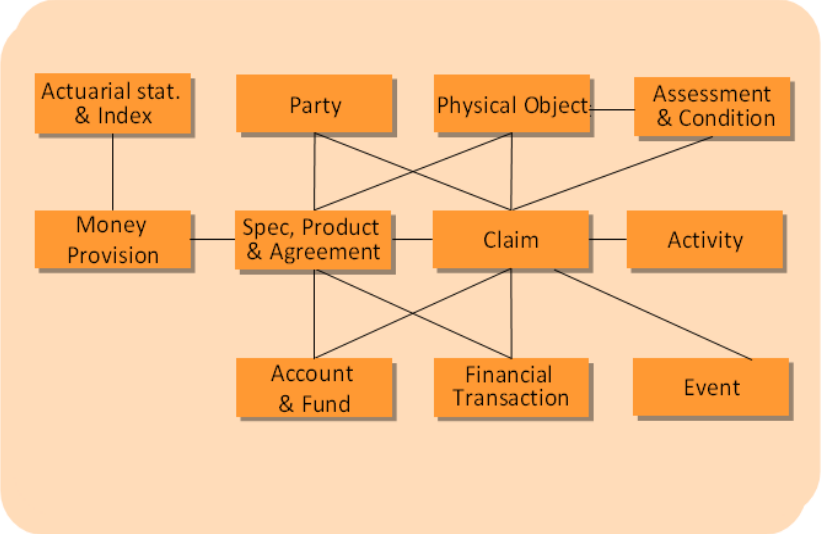
The Business Data Model can be characterized as a *business* view because it does not include technical implementation considerations, such as details related to any specific database

This is a conceptual data model that represents at a high level and from a technical perspective the insurance organization's data requirements. The Business Data Model is:

- Conceptual: "what", not "how"
- Normalized (to 3NF)
- Flexible
- Corporate-level, standard across all functions and departments
- Cleansed, reconciled and non-redundant *business* view of the atomic, elementary data concepts and elements needed by the enterprise in its operational functions.

The Business Data Model utilizes a standard and easy-to-use set of patterns in order to represent the core conceptual data entities of the organization. The entities are placed in a hierarchy based on 'generic or specific' classifications and are related through top-level relationships that link the major groupings in the hierarchy at the top level. The more specific relationships between data concepts are, in turn, placed in a complementary hierarchy, as specialized kinds of the generic relationships.

The following diagram depicts some of the key concepts of the IIW Business Data model relevant for a Solvency II project.



An important feature of the IIW Business Data Model is that it is interconnected with the ***Insurance Application Architecture's Business Object Model,*** *used for processing modelling*

An important feature of the IIW Business Data Model is that it is interconnected with the Insurance Application Architecture's Business Object Model, used for process modelling, by representing *exactly the same* data concepts using the Entity Relationship format while the IIA represents them using the UML format.

Enterprise Warehouse Model

Using the Enterprise Data Warehouse Model does not imply the building of an Enterprise Data Model but rather provides a default data-model from which the relevant data for your Solvency II project can be brought into scope

The IIW Enterprise Data Warehouse model is a customizable data model that provides the historical and atomic data needed for a data warehouse and business intelligence infrastructure supporting multiple lines of business and analytical functions within medium to large insurers.

Technically, the IIW Enterprise Model is a design model which is complete with technical elements that support full historic versioning and reconciliation of the atomic transactional data loaded into the enterprise warehouse from various source systems. It also can store summarized information, in the form of de-normalized fact entities arranged in a dimensional 'star schema' pattern.

The atomic elements of the IIW Enterprise Warehouse Model are mapped to the conceptual model elements included in the Business Data Model, while the analytical, summarized elements are mapped to BSTs, measures and dimensions.

The Enterprise Warehouse model includes a default physical database design generated from the logical entity/relationship data model. It is likely that this default model requires additional customization by a data warehouse design team comprised of senior warehouse architects and database administrators to ensure optimal

configuration for the financial institution's data distribution and performance characteristics.

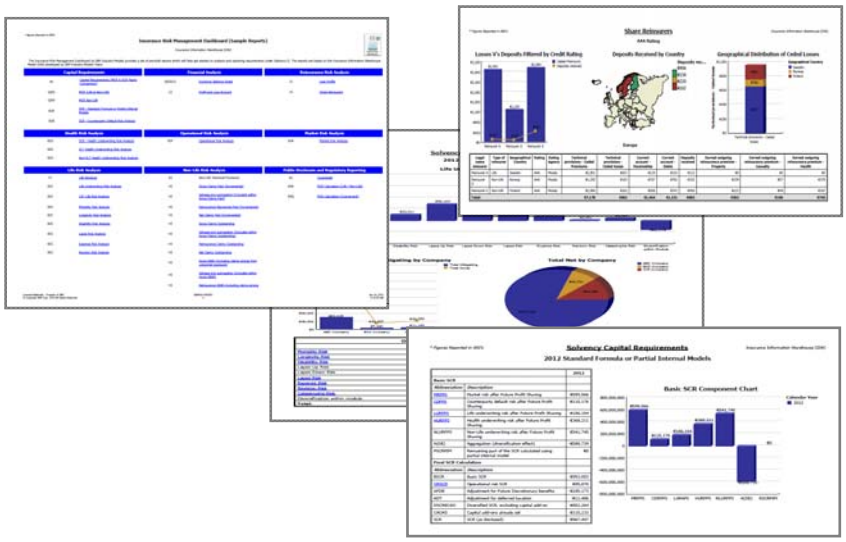
The IIW Enterprise Data Warehouse model contains data structures needed by an insurance company to support the IFRS/IAS, SOX and Solvency II reporting requirements.

*New IIW Solvency II Sample Reports**

IIW now includes sample reports based on the Business Solution Templates available in the IIW models. As described in the early section on Business Solution Templates, BSTs are not just used to physically represent that the measures and dimensions to be included in a given report. They can be used to identify the data structures needed to support the reporting requirements and to generate DDL to construct facts and dimension tables, from which the report can be generated.

For your convenience, step by step instructions are available with the '*8.4 IIW installation',* to re-create these pre-configured reports that come complete with sample data and charts.

The 8.4 release provides some specific additional assistance for Solvency II reporting by including a selection of sample reports, pre-configured with IIW; modeled on the CP58 Business Solution Templates. These Cognos-based reports address 15 of the CP58 reporting templates and include 38 actual reports, covering areas such as SCR (market, operational, Life, Non-Life), MCR, Economic Balance sheet, etc.

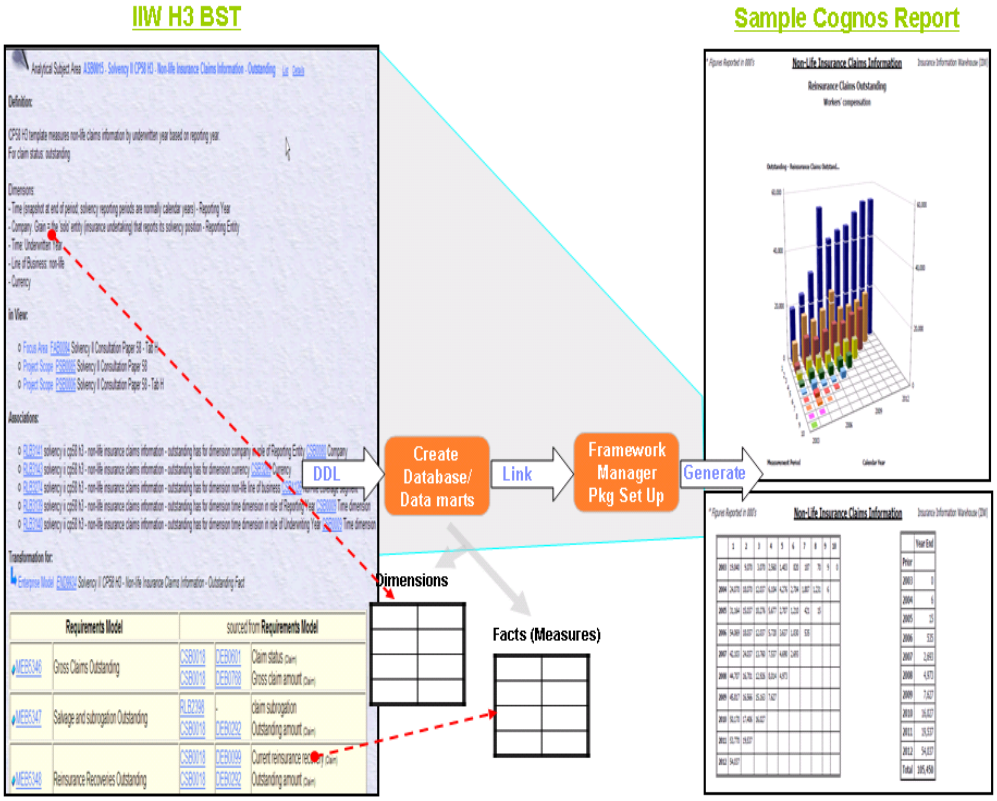


For these selected CP58 reports, the DDL script was generated based on the IIW model content and the corresponding fact entities and measure tables generated.

For your convenience, step by step instructions are available with the '*8.4 IIW installation',* to re-create these pre-configured reports that come complete with sample data and charts.

As demonstrated by the illustrated H3 example, the Solvency II Business Solution Templates can, through a relatively simple process support the creation of the dimensions and fact entities required for CP58 reports:

- Select and Customize the IIW Business Solution Template
- Generate the DDL within your data modelling tool
- Create a dimension and fact entities within your database using the DDL
- Configure and set up the Framework Manager Package
- Create the reports using Cognos Report Studio

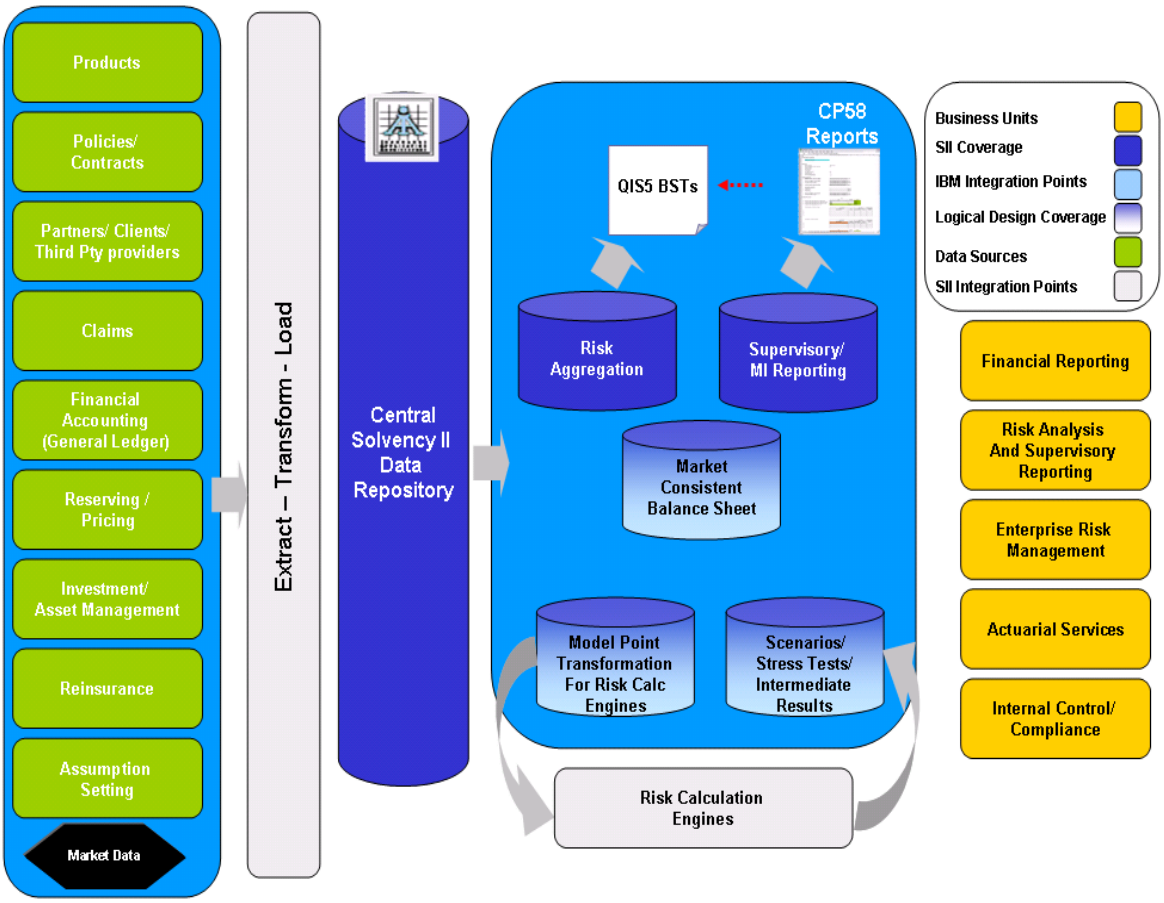


Chapter 4 ***IIW Components and the Solvency II Solution Architecture***

The architecture and design of a Solvency II solution depends on a variety of factors including complexity of the business, number and quality of data sources and integration requirements with processes and other systems.

Various functions will be impacted by Solvency II and will require new information requirements**:**

- *Actuarial Services* will need to automate the collection, reconciliation and cleansing of data from source systems to feed risk calculation engines. They may also require the storage of intermediate and final results of risk simulations/ calculations (e.g. best estimate) for greater transparency.
- *Internal control and compliance* will need to ensure transparency, quality and reconcilability of the inputs to processes and calculations, the data transformations and the outputs to Solvency II processes with the appropriate checks and balances.
- *The Enterprise Risk Management* will look to get a view of risk, not only for a given risk component within Solvency II but across risks and across multiple entities within group structures where applicable.
- *The Risk Analysis and Supervisory Reporting functions* will not only require new reporting to meet the public disclosure requirements for Solvency II. They will also require new management information reporting to ensure risk is embedded in decision making.
- *Financial Reporting* may require the alignment of IFRS Financial reporting with Solvency II with some degree of reconciliation.



IIW provides a flexible methodology of modelling Solvency II data structures which can be customized and configured to the needs of your solution design.

The diagram presents an overview of a possible Solvency II implementation and illustrates some of the key areas supported by IIW.

- Central Solvency II Data Repository
- Solvency II Data Marts and Reporting
- Integration with Risk Calculation Engines

Solvency II Central Data Repository

For Solvency II, a central trusted data repository is needed, containing not only data originating from core administration systems (policy admin, claims, reinsurance, asset management etc) but also external data from third party service providers, benchmark data, investment data etc.

1. IIW supports the construction of central data repository with accelerators including:
    - Industry standard definitions and Solvency II content to accelerate the identification of Solvency II data requirements. IIW BSTs for QIS5 and CP58 can also help identify the Solvency II data elements required and include mappings to the relevant area of the IIW enterprise model
    - A *requirements model* to help structure new or restructure pre-existing data sources to meet the new Solvency II requirements
    - A *logical model* developed specifically for insurance with very flexible design constructs that can allow for different data configurations required under Solvency II, for example; alternative Solvency II business line definitions such as *Health SLT*
    - In support of data model management, *IIW includes Multi Model Mapper (MMM) and can be readily with integrated IBM InfoSphere Data Architect*) and with other modelling tools including Erwin.

During design phase, your Solvency II project needs to determine the appropriate design which fits the insurance organization's system infrastructure, processes and Solvency II ambition to build a model environment that meets the approval of the regulator.

Solvency II Data Marts and Reporting

During design phase, your Solvency II project needs to determine the appropriate design which fits the insurance organization's system infrastructure, processes and Solvency II ambition to build a model environment that meets the approval of the regulator. The following details some illustrative examples of some possible applications of IIW which can contribute to your solution design:

- *Risk Aggregation*

IIW supports the collection of complex calculations which ultimately feed the supervisory and management reporting through:

    - Extensive BST Coverage for QIS5 has been included with 8.4 to accelerate in the underlying calculations which would then feed public disclosure and management information. For the key MCR/SCR measures mappings exist from CP58 measures to the QIS5 measures as highlighted in the diagram
    - Solvency II parameters/data structures for risk aggregation have been highlighted within the requirements model e.g. best estimates, valuations, correlation and other parameters

    - In the enterprise model, *logical design coverage* including the types of data structures required for consolidating / aggregating the risk aggregation across the organization are available
- *Supervisory and Management Information Reporting* - The latest IIW release has extended the SII reporting coverage with:
    - The full suite of CP58 reports has been provided in BST format to aid the development of Solvency II reporting.
    - Mappings between QIS5 and CP58 measures for MCR/SCR are also available
    - All the BSTs can be readily integrated with Cognos Reporting
    - 15 Pre-configured IIW CP58 Sample Cognos Reports are provided with the IIW installation including sample data
- *Market Consistent Balance Sheet*
    - This data should store and track balance sheet movements between periods and allow for some degree of alignment with financial reporting and IFRS-compliant financial statements
    - Solvency II Balance Sheet BST coverage has been included with the latest IIW release
    - IIW also includes support for IFRS analytical requirements which can be linked to the equivalent analytical requirements for the Solvency II Balance Sheet

Integration with Risk Calculation Engines

- *Model Point Transformation for Risk Calculation Engines* - The definition of model point files for Risk calculation engines can vary by risk engine and by customer depending on configuration**.** However, IIW can support the construction of model point transformation files with the *logical design coverage* within the enterprise model. IIW for example can support the storage of parameters, assumption setting, historical data, data required for economic scenario generation, market data for statistics and valuations, in addition to supporting source system data requirements.
- *Scenarios/ Stress Testing / Intermediate Results*- It may be required to keep track and maintain history on assumptions, scenarios, experience data and not just the final result. The enterprise model provide logical design coverage for the storage of this type of data within data stores such as ACTUARIAL STATISTICS & INDEX data stores and includes support for data such economic assumptions, correlation factors between , scenarios including history and versioning capability.

Chapter 5 IIW Support for Solvency II Pillars

IIW provides direct support for 2 of the 3 pillars under Solvency II.

- *QIS5 Business Solution Templates* cover the quantitative data and measures under Pillar 1. This may be based on the standard formulas or internal models. Where the standard formula is being adopted, the IIW model can act as a reference model to guide these requirements.
- *CP58 Business Solution Templates* cover the measures detailed in the Solvency II consultation paper on public disclosure reporting

Within the requirements model, there are three are 3 new focus areas of interest to Solvency II practitioners:

- Solvency Quantitative Requirement (Pillar 1)
- Solvency Reporting and Public Disclosure (Pillar 2)
- Solvency Risk Modelling (Pillar 1)

At the time of writing, the 8.4 release has provided for the addition of 115 new BSTs covering both QIS5 and CP58 which can be found within the Solvency Quantitative Requirement and Solvency Reporting and Public Disclosure areas respectively. For the QIS5 BSTs, the measures can be easily referenced to the associated definition within QIS5 technical specification.

An additional focus area has been provided for Solvency Risk Modelling which includes pointers to the relevant atomic data areas needed for Solvency e.g. assumptions, correlation factors, market data etc.

The appendix includes a full list of BST coverage within the latest release.

Appendix - **Listing of the IIW Solvency II BST**

*(*These BSTs are already available in 8.3 but may have been upgraded as part of the latest release)*

CP 58 Reporting Business Solution Templates
Solvency II Consultation Paper 58 - MCR Tabs
Solvency II CP58 B4A and B4Q - Final MCR calculation*
Solvency II CP58 B4A and B4Q - Life MCR calculation*
Solvency II CP58 B4A and B4Q - Life MCRx calculation*
Solvency II CP58 B4A and B4Q - Non Life MCR calculation*
Solvency II CP58 B4A and B4Q - Notional Life and Non-life MCR calculation
Solvency II Consultation Paper 58 - SCR Tabs
Solvency II CP58 B3B - Reinsurance exposures
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