

# **SOLVENCY II**

## **DETAILED GUIDANCE NOTES**

### **MARCH 2010**

#### **SECTION 3 - DOCUMENTATION**





# SECTION 3: DOCUMENTATION

## Overview

This section outlines the Solvency II requirements for documentation. It specifically addresses the documentation of the internal model as per article 125 but agents could equally apply many of these principles to general Solvency II documentation.

Managing agents are strongly advised to consider throughout the documentation process whether the production of the document is material to fulfilling the specific requirements of Articles 120 – 126. Agents should also be aware of the end user of the document, i.e. the intended audience. For example, the level of detail required by senior management as opposed to actuaries will differ considerably.

Also, it is equally important to ensure that documentation is proportional; striking a balance between satisfying documentation requirements and ensuring the task of producing, reviewing and maintaining documents does not unnecessarily impact process experts/owners in completing their day-to-day job.

## Guidance

Managing agents should note that this guidance represents Lloyd's best view of current requirements but is subject to ongoing discussion and change as both CEIOPS proposals and FSA requirements become finalised and Lloyd's own development on Solvency II progresses. Lloyd's will continue to monitor and review progress in these areas and seek to update the guidance as appropriate.

The commentary on proposed level 2 measures attached highlights the relevant sections for the dry run and does not reproduce the full level 2 text. Any additional guidance provided in this document is intended to supplement the level 2 measures, not repeat them, and agents must therefore ensure that they are familiar with all of the requirements and do not rely solely on the additional guidance provided here.

Whilst this document refers to general Solvency II requirements, this guidance is specific to Lloyd's and managing agents in many areas. Due to the unique structure of Lloyd's and the application of the Solvency II directive at society level, some of this guidance will not be relevant to non Lloyd's firms.

## Contents

This section includes the following

- Level 1 directive text and commentary on application of proposed level 2 requirements to Lloyd's managing agents
- Guidance on documentation
- Appendix 3a - Example Solvency II overarching process document
- Appendix 3b - Example procedure document
- Appendix 3c - Example policy document



# LEVEL 1 AND LEVEL 2 MEASURES

The Level 2 measures set out here are based on CEIOPS paper Doc-48-09 (formerly CP 56), published November 2009. These measures may be subject to modification before they come into force.

## Documentation standards

### Directive Article 125

*Insurance and reinsurance undertakings shall document the design and operational details of their internal model.*

*The documentation shall demonstrate compliance with Articles 120 to 124.*

*The documentation shall provide a detailed outline of the theory, assumptions and mathematical and empirical bases underlying the internal model.*

*The documentation shall indicate any circumstances under which the internal model does not work effectively.*

*Insurance and reinsurance undertakings shall document all major changes to their internal model, as set out in Article 115.*

## Application of proposed level 2 requirements to Lloyd's managing agents

### Documentation process; design and operational details

#### Article 125/CEIOPS Doc 48/09: 9.55-9.67

A managing agent must ensure that:

- the documentation of an internal model is thorough sufficiently detailed and sufficiently complete to enable an independent knowledgeable third party to form a sound judgment on the reliability of the internal model and its compliance with Articles 120 to 126, and to understand the reasoning, underlying design and operational details of the model.
- the documentation of the internal model is timely and up to date.
- the documentation describes the drawbacks and weaknesses of the model, including the circumstances under which the model does not work effectively.
- the granularity of the documentation takes into account the level of management or the key function at which it is intended to be used.
- the documentation includes evidence that all levels of management of the syndicate understand the relevant aspects of the internal model. The level of understanding for different bodies and personnel would depend on their oversight responsibilities of the internal model. The managing agent's board must understand key parts of the internal model, as well as the related limitations, so that they are able to confirm use of the model and to take responsibility for that decision.
- the documentation includes a list of all documents that the agent considers relevant to the internal model and where and how these documents can be accessed. The list of documents bringing together all relevant pieces of documentation is a key part of the documentation, and will be vital for any users of the documentation. The documentation does not have to be a single document, provided there is a list or a mapping process that brings it all together. The documentation shall also identify those responsible for pulling together and updating documents.
- the documentation includes an overview of the historical development of the internal model, including methodologies, assumptions and data, so that an independent knowledgeable third party would be able to understand key steps and their reasoning.
- they have documented policies, controls and procedures in place for the management of operational details of the internal model, including written responsibilities and accountabilities. These shall be clearly understood by all incumbents and be reviewed at least annually.

- descriptions of the technology and software tools used to implement the internal model, (whether they are internal or external solutions), are thorough, sufficiently detailed and sufficiently complete to support a review by an independent, knowledgeable third party. The description shall demonstrate that they are included in the agent's contingency plans, security policies and business recovery plans.
- the documentation contains explicit information about data management. This may include a general description of the databases, dictionaries that provide clear definitions of data items, descriptions of the databases and their construction, descriptions of external and internal data interfaces, processes used to obtain and load the data, data consistency aspects, filters used to create and debug the database and security and maintenance information. In addition, a data flow chart illustrating how data flows through the internal model is needed so that the origin of data used in the calculation of the probability distribution forecast can be transparently tracked.
- It keeps a record of version control of the internal model. Material changes to the design or the operational details of the internal model, whether classed as major or minor, must be documented, including the rationale for the changes.
- all relevant testing and validation done in relation to model changes is documented.

When demonstrating compliance with Articles 120 to 124, managing agents must document how the requirements have been taken into account and how they have been fulfilled.

## **Theory, assumptions, mathematical and empirical basis**

### **Article 125/CEIOPS Doc 48/09: 9.68-9.72**

A managing agent must ensure that:

- the documentation of the theory, assumptions, and mathematical and empirical basis underlying the internal model is thorough, sufficiently detailed and sufficiently complete enough to ensure that an independent knowledgeable third party could understand the model framework, its methodology, the underlying assumptions, and the limits of applicability of the model and in principle reproduce the model outputs if all the parameters and exposure data were available.
- the documentation contains a map of mathematical methods used and a description of the theories and empirical basis underlying the mathematical methods. The documentation shall include the rationale for selecting a specific method and an elaboration on the techniques used to meet the nature and complexity of the item under consideration. This shall include at least which risks are captured and which are not, key assumptions and analysis of known drawbacks or weaknesses.
- all algorithms related to the mathematical methods are thoroughly documented, including the rationale supporting their selection and any known drawbacks or weaknesses.
- the documentation includes a rationale for decisions on assumptions, data and parameters and their development over time. Known drawbacks or weaknesses that have a material impact on the appropriateness of the internal model must be documented. Where complex approaches have been used, then a more detailed description of the approach shall be given. Where adjustments are made to the underlying data, the nature, amount, and rationale for the adjustments shall be clearly stated.
- the documentation includes all use of expert judgment on assumptions, data and parameters. Agents must have thorough documentation for expert judgment, including at least why it is an expert judgment, what processes the expert judgment is based on, the extent the expert judgment is likely to affect the internal model result and how the expert judgment has been evaluated. Where an expert judgment has been made, the name, experience and qualifications of the person or people making the expert judgment shall be documented.

## **Circumstances where model does not work effectively**

### **Article 125/CEIOPS Doc 48/09: 9.73-9.74**

A managing agent must ensure that documentation of the circumstances under which it believes an internal model will not work effectively, addresses both design and operational details of the internal model, as well as the possible implications of not complying with Articles 120 to 126.

When assessing and documenting circumstances where the internal model does not work effectively, an agent must take into account at least the following aspects:

- Limitations in risk modelling and the cover of risk captured.
- The nature, degree and sources of uncertainty surrounding the results of the internal model and the sensitivity of key assumptions.
- Shortcomings and/or deficiencies in input data.
- Any specific features, circumstances or limitations of the internal model that present potential concerns or that significantly increase the uncertainty of its results beyond what would reasonably be expected.
- Insufficiencies in IT systems, governance and related controls surrounding the internal model.

### **Model change documentation**

#### **Article 125/CEIOPS Doc 48/09: 9.75-9.76**

A managing agent must ensure that documentation of major model changes addresses the implications for both the design and operational details of the internal model and an assessment of continued compliance with Articles 120 to 126 after the model change has been implemented.

When a major change has had a significant impact on the outcome of the internal model, the outcome at the most recent valuation date shall be calculated with both the revised version and the previous version of the internal model. The outcomes shall be compared. Any differences between the two due to the model change shall, if possible, be identified, quantified and documented.



# DOCUMENTATION

The guidance set out below has been prepared to assist Managing Agents with the composition of Solvency II compliant documentation and should be read in conjunction with the level 2 requirements. This section specifically addresses the documentation of the internal model as per article 125 but agents could equally apply many of these principles to general Solvency II documentation.

## Documentation requirements

At the outset it may be helpful to consider overlaps with current documentation standards, i.e. the ICA process, as an initial basis for review and refinement. The following are examples of new sections required under Solvency II:

- Design and operational details of the model
- Compliance with Articles 120 – 126
- Documentation to be sufficiently detailed to enable an independent knowledgeable third party to form a sound judgement as to the reliability of the model
- The theory of the model and an understanding of its complexity
- Acknowledgment of the model's weaknesses and planned steps to seek redress
- Process for implementing the model change policy
- Process for reviewing all internal model documentation on a regular basis
- The use of external sources (models and/or data) to be evidenced.

Managing agents are strongly advised to consider throughout the documentation process whether the production of the document is **material** to fulfilling the specific requirements of Articles 120 – 126. Agents should also be aware of the end user of the document, i.e. the intended audience. For example, the level of detail required by senior management as opposed to actuaries will differ considerably.

Also, equally important is to ensure that documentation is **proportional**; striking a balance between satisfying documentation requirements and ensuring the task of producing, reviewing and maintaining documents does not *unnecessarily* impact process experts/owners in completing their day-to-day job.

## Development of the model

Agents will need to ensure that the development of the internal model is thoroughly documented. Where a new Solvency II model is being built, development can be documented alongside the development process.

Where agents are relying on components carried over from their current ICA model, they should ensure that they are able to reference back to ICA documentation to show historical model changes over time and that all changes made to adapt the model for Solvency II are clearly documented.

## Format and storage of documentation

Internal model documentation will necessarily take a variety of forms including policies, procedures, processes, model notes and reports to management/supervisory boards. Whilst the various Solvency II standards prescribe much of the content of documentation, considerable flexibility exists for agents to select their preferred format and method of storage. Sample pro formas/templates are set out in the attached appendices as illustrative examples for agents but are not deemed mandatory.

Agents should ensure that documentation is held in such a way that it is easy to maintain and update as required and can also be monitored and controlled. Lloyd's expects that it will be easier to achieve this by holding documentation electronically in a central electronic store such as a wiki, portal or sharepoint system rather than only maintaining a hard copy.

Holding documentation in this way should improve accessibility and make linking any relevant supplementary documents simpler. Agents should however be able to produce hard copies of any relevant documentation when requested to do so.

Due to the relative complexity of Solvency II requirements and particularly the fulfilment of the 'use test' it is recommended to have an overarching process document to draw together all the underlying procedures and policies; to ensure senior managers have a complete picture of their internal model.

## Documentation index

There should be a clear documentation index detailing what is held and how it can be accessed. Agents should list all the documents that they consider relevant to the internal model, detailing where and how these documents can be accessed. The documentation does not have to be one single document, provided there is a list or a mapping process that brings it all together.

## Control framework

Agents must ensure that they have sufficient governance in place around their documentation with clear responsibilities assigned for update and monitoring of relevant sections. There should be clear policies and procedures in place to support this including how often reviews should take place as this may vary from one section to another.

## Granularity

It is advisable to draft documentation at different levels so that the granularity of detail is suitable for the intended recipient. This will also help provide evidence that all levels of management understand the relevant aspects of the internal model. The level of understanding for different bodies and personnel would depend on their oversight responsibilities for the internal model. A potential allocation into three levels is as follows:

**Executive summary** – a high level overview suitable for board members. This could include an outline of the model scope, uses of the model, the risk framework, model governance, and information systems.

**Technical detail** - suitable for an independent knowledgeable third party to form a sound judgement as to the reliability of the model. This should include all the content at the executive level plus technical summaries and a description of the operation of the model.

**Specialist level** - suitable for individuals and teams involved in the detail of the model. The specialist level is best evidenced via appendices to the technical documentation and could include granular procedures, formulae, data, parameters, reasonableness checks and validation / sensitivity testing.

Whilst this gives a suggested approach for granularity, agents should ensure that documentation is structured such that it provides the relevant individuals with the appropriate level of detail, as the level of knowledge expected from senior management and board members will vary according to their role. For example, the Chief Actuary would be expected to have greater technical knowledge of the model than, say, the non-executive chairman. The Finance Director may have greater understanding than the Business Development Director.

However, where the model is used to inform certain decisions or as part of specific business processes, then the individuals involved in, and those who own, those decisions or processes should have a detailed understanding of the model, its outputs and limitations. For example, the Reinsurance Manager and Active Underwriter should understand the reinsurance modelling process in some depth.

Senior management on the Committee primarily charged with responsibility for the design, implementation and enhancement of the model will be expected to have more detailed knowledge of the model than those not on such a Committee.

## Document definitions

### Process document (see appendix 3a for example template)

A process document sets out what has to be completed;

- Set of interdependent and linked procedures;
- Process specific and details the steps taken to achieve an objective;
- Defined start and end points;
- A process usually has more than one procedure;
- Consists of a set of predefined actions;
- Defines users approach to performing;
- Consistent approach;
- Aim is to achieve the requirements of the policy.

### **Procedure document (see appendix 3b for example template)**

A procedure sets out how to complete a series of steps, from inputs through to outputs;

- Specified series of actions or operation;
- Consistent execution of which will produce the same results under the same conditions;
- The outputs of one procedure may serve as inputs to the next and so on until a known goal or end result is achieved.

Procedure documents are inherently detailed and intended for users who are knowledgeable about the process, for this reason it recommended that procedures are customised to the specific requirements of the department/group with minimal standardisation albeit filename, path and version control.

### **Policy document (see appendix 3c for example template)**

A policy document sets out why things are done in a specific way;

- Background; an indication of reasons, history and intent that led to the creation of the policy for example, change policy;
- 'Policy Purpose' outlining why the policy is needed and the desired effect or outcome;
- Scope and applicability; i.e. who or what, including actions, is and isn't affected. This will ensure focus and avoid unintended consequences;
- Roles and responsibilities; definitions of and any related oversight or governance structures;
- Definitions; providing clear and unambiguous definitions for terms and concepts;
- Guides users in their duties;
- Consistent approach;
- A policy may have more than one process.

Policy documents are standalone i.e. require no further explanation and should be written to the same standard to ensure consistency.



## **APPENDIX 3A**

### **EXAMPLE SOLVENCY II OVERARCHING PROCESS DOCUMENT**

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**Document Control**

**Key Document Summary**

<b>Document Status</b>	<Draft/Issued>
<b>Process Owner</b>	<Document owner>
<b>Approved by</b>	<Document approver>
<b>Date Approved</b>	<DD/MM/YY>
<b>Document Location</b>	

**Document Draft History**

Date	Version & Status	Reviewers	Action / Comment
DD/MM/YY	0.1 Draft		

**Document Review History**

Date	Version & Status	Reviewers	Action / Comment
DD/MM/YY	0.1 Draft		

## Contents

### **Executive Summary**

#### **Chapter 1 Introduction and Scope of Internal Model**

- 1. 1 Define Scope of Internal Model
- 1. 2 Justification for Limited Scope
- 1. 3 Explanation of Integration with Standard Formula
- 1. 4 Documentation Index

#### **Chapter 2 Design & Operational Details**

- 2. 1 Historical Development of Internal Mode
- 2. 2 Policies, Controls & Procedures
- 2.3 Roles and Responsibilities
- 2.4 Results of Annual Review
- 2.5 Internal Model Technology
- 2.6 Contingency, Security Plans & Business Recovery
- 2.7 Data Management
- 2.8 Internal Model Version Control
- 2.9 Internal Model Material Changes
- 2.10 Testing & Validation of Internal Model Changes

#### **Chapter 3 Compliance with Articles 120-124**

#### **Chapter 4 Internal Model Structure**

- 4.1 Mathematical methods, Theories & Empirical data

#### **Chapter 5 Internal Model Algorithms**

- 5.1 Algorithms related to Mathematical methods

#### **Chapter 6 Expert Judgement on Assumptions, Data & Parameters**

- 6.1 Expert Judgement
- 6.2 How is Expert Judgement evaluated?
- 6.3 Name & Qualification of decision makers

#### **Chapter 7 Documentation of Major Changes**

- 7.1 Internal Model Change Policy
- 7.2 Implications of Major Changes on Internal Model

#### **Chapter 8 Model Weaknesses**

- 8.1 Circumstances under which the Internal Model does not work effectively
- 8.2 Drawbacks & Weaknesses of the Internal Model

#### **Chapter 9 Governance**

- 9.1 Evidence that All levels of management understand internal model & limits
- 9.2 Board members use of the Internal Model in decision making

#### **Appendices**

## **Executive Summary**

- Summarise scope of internal model (useful to support this with flow diagram).

## Chapter 1 - Introduction and Scope of Internal Model

### 1. 1 Define Scope of Internal Model

### 1. 2 Justification for Limited Scope

### 1. 3 Explanation of Integration with Standard Formula

### 1. 4 Documentation Index

- Directory Summarising ALL Internal Model related documentation.
- Where and How Internal Model documentation can be accessed.
- Who draws together and updates the documentation.

## Chapter 2 Design & Operational Details

### 2. 1 Historical Development of Internal Model

- Historical development of the internal model include;
- Methodologies;
- Assumptions;
- Data Used;
- Key Steps;
- Reasoning.

### 2. 2 Policies, Controls & Procedures

The following table details the key procedures, policies and reports used and created for the Internal Model.

Document	Description	Format	Control Type	Location

### 2.3 Roles and Responsibilities

The following table lists who has responsibility for key areas of the Internal Model and who provides cover in their absence.

Internal Model Function	Person with Written Responsibility	Person with Written Accountability

### 2.4 Results of Annual Review

(process, procedures & controls)

## 2.5 Internal Model Technology

The following table identifies the technology and software tools used in the Internal Model Process/hyperlink to more detailed procedural documents/manuals etc.

Function	Software/ Technology	Description	Internal/External

## 2.6 Contingency, Security Plans & Business Recovery

### 2.7 Data Management

- Internal Model Flowchart from Source to Probability;
- Description of databases & construction;
- Data Dictionary;
- Data Interfaces;
- Data loading process;
- Data consistency;
- Filters to debug databases;
- Security & maintenance.

### 2.8 Internal Model Version Control

### 2.9 Internal Model Material Changes

### 2.10 Testing & Validation of Internal Model Changes

## Chapter 3 Compliance with Articles 120-124

- Use Test;
- Statistical Quality Standards;
- Calibration Standards;
- Profit & Loss Attribution;
- Validation Standards;
- Documentation Standards;
- External Models & Data.

## **Chapter 4 Internal Model Structure**

**4.1 Mathematical methods, Theories & Empirical data**

**4.2 Internal Model Limits of Application**

**4.3 Mathematical Maps**

**4.4 Rationale for Mathematical Methodology**

**4.5 Detail of Techniques Used**

**4.6 Modelling of Risk**

## **Chapter 5 Internal Model Algorithms**

**5.1 Algorithms related to Mathematical methods**

**5.2 Rationale**

**5.3 Known Weaknesses**

**5.4 Description of any Adjustment to any underlying data**

## **Chapter 6 Expert Judgement on Assumptions, Data & Parameters**

**6.1 Expert Judgement**

**6.2 How is Expert Judgement evaluated?**

**6.3 Name & Qualification of decision makers**

## **Chapter 7 Documentation of Major Changes**

**7.1 Internal Model Change Policy**

**7.2 Implications of Major Changes on Internal Model**

## **Chapter 8 Model Weaknesses**

**8.1 Circumstances under which the Internal Model does not work effectively**

**8.2 Drawbacks & Weaknesses of the Internal Model**

## **Chapter 9 Governance**

**9.1 Evidence that All levels of management understand internal model & limits**

**9.2 Board members use of the Internal Model in decision making**

## **Appendices**

**Appendix 1**

**Appendix 2**



## **APPENDIX 3B**

### **EXAMPLE - PROCEDURE DOCUMENT**

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**Document Control**

**Key Document Summary**

<b>Document Status</b>	<Draft/Issued>
<b>Process Owner</b>	<Document owner>
<b>Approved by</b>	<Document approver>
<b>Date Approved</b>	<DD/MM/YY>
<b>Document Location</b>	

**Document Draft History**

<b>Date</b>	<b>Version</b>	<b>&amp;</b>	<b>Reviewers</b>	<b>Action / Comment</b>
DD/MM/YY	0.1	Draft		

**Document Review History**

<b>Date</b>	<b>Version</b>	<b>&amp;</b>	<b>Reviewers</b>	<b>Action / Comment</b>
DD/MM/YY	0.1	Draft		

**Contents**

Executive Summary.....  
Chapter 1 Introduction and Scope Procedure .....

Note: Procedures are customised to group/department which specifically use the document i.e. free style.

## **APPENDIX 3C**

### **EXAMPLE - POLICY DOCUMENT**

**Name – Policy Owner/Who Signs Off**

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**Document Draft History**

<b>Date</b>	<b>Version</b>	<b>&amp;</b>	<b>Reviewers</b>	<b>Action / Comment</b>
DD/MM/YY	0.1	Draft		

**Document Review History**

<b>Date</b>	<b>Version</b>	<b>&amp;</b>	<b>Reviewers</b>	<b>Action / Comment</b>
DD/MM/YY	0.1	Draft		

## Contents

### **Executive Summary**

### **Chapter 1 Terminology & Definitions**

- 1.1 Glossary of terms
- 1.2 Specific Requirements
- 1.2 Scope of <Name> Policy
- 1.3 Materiality
- 1.4 Proportionality

### **Chapter 2 Policy Details**

**Appendix 1** - Scope of the Internal Model

**Appendix 2** – Syndicate specific data requirements

## **Executive Summary**

- Purpose of this policy
- Legal & regulatory background
- Business objectives
- Ownership of the Policy
- Key stakeholders, signatories & period of review

## **Chapter 1 Terminology & Definitions**

**1.1 Glossary of terms**

**1.2 Specific Requirements**

**1.3 Scope of <Name> Policy**

**1.4 Materiality**

**1.5 Proportionality**

## **Chapter 2 Policy Details**

**Appendix 1 - Scope of the Internal Model**

**Appendix 2 – Syndicate specific data requirement**